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       ; Patent No. 6465239
; GENERAL INFORMATION:
; APPLICANT: Lee, Se-Jin
; APPLICANT: McPherron, Al
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TELEFAX: 858-677-1465
INFORMATION FOR SEQ ID NO: (SEQUENCE CHARACTERISTICS:
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CLASSIFICATION: 424
PRIOR APPLICATION DATA:
APPLICATION NUMBER: 0:
FILING DATE: 19-SEP-1:
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SOFTWARE: FastSEQ f
CURRENT APPLICATION DA
APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                          NAME: Haile, Ph.D, Lisa A. REGISTRATION NUMBER: 38,347 REFERENCE/DOCKET NUMBER: 07 TELECOMMUNICATION INFORMATION:
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NAME: Haile, Ph.D, Lisa
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MEDIUM TYPE: Diskett
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US-09-451-501-6
; Sequence 6, A
; Patent No. 64
; GENERAL INF
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SOFTWARE: F
SEQ ID NO 6
LENGTH: 12
TYPE: PRT
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APPLICAN:
APPLICAN:
TITLE OF INVENTION.
TITLE OF SEQUENCES: 27
NUMBER OF SEQUENCESS:
CORRESPONDENCE ADDRESS:
ADDRESSEE: Fish & Richardson P.C.
STREET: 4225 Executive Square, Suite 14
CITY: La Jolla
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TLE OF INVENTION: TRANSGENIC AQUATIC SPECILE REFERENCE: JHU1120-9

RRENT APPLICATION NUMBER: US/09/378,238

RRENT FILING DATE: 1999-08-19

RLIER APPLICATION NUMBER: 08/795,071

RLIER APPLICATION NUMBER: 08/525,596

RLIER FILING DATE: 1995-10-25

RLIER APPLICATION NUMBER: PCT/US94/03019

RLIER FILING DATE: 1994-03-18

RLIER APPLICATION NUMBER: 08/033,923

RLIER APPLICATION NUMBER: 08/033,923
                                                                                                                                                                                                                                                                                                                                                      ZIP: 9203/
COMPUTER READABLE FORM:
MEDIUM TYPE: Diskette
COMPUTER: IBM Compatible
OPERATING SYSTEM: Windows 95
SOFTWARE: FastSEQ for Windows Version 2.0
SOFTWARE: DATA:
                             NAME: Lisa A. Haile, Ph.D.
REGISTRATION NUMBER: 38,347
REFERENCE/DOCKET NUMBER: 07265/105001
TELECOMMUNICATION INFORMATION:
TELEPHONE: 619/678-5070
TELEFAX: 619/678-5099
FORMATION FOR SEQ ID NO: 6:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                  ATTORNEY/AGENT INFORMATION:
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TYPE: amino
                                                                                                                                                                                                                                                                                                     SOFTWARE: FastSEQ for Windows Ver:
NT APPLICATION DATA:
APPLICATION NUMBER: US/09/451,501
FILING DATE: 30-No. 6468535-1999
CLASSIFICATION: <Unknown>
APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ING DATE: 1993-03-19
EQ ID NOS: 41
astSEQ for Windows Version 4.0
                                                                                                                                                                                                                       APPLICATION NUMBER: 08/795,071
FILING DATE: <Unknown>
APPLICATION NUMBER: PCT/US94/03019
FILING DATE: 18-March-1994
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Application US/09451501
168535
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                f: Se-Jin Lee et al.,
INVENTION: GROWTH DIFFERENTIATION FACTOR-8
SEQUENCES: 27
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Pred. No. 6.7e-52;
l; Mismatches 11
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RESULT 6
US-09-378-238-19
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US-09-451-501-6
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US-09-378-238-21
; Sequence 21, Ap
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APPLICANT: Lee, Se-Jin
APPLICANT: McPherron, Alexandra C.
TITLE OF INVENTION: GROWTH DIFFERENTIATION FACTOR-8 NUCLEIC
TITLE OF INVENTION: ACID AND POLYPEPTIDES FROM AQUATIC SPECIES
TITLE OF INVENTION: TRANSGENIC AQUATIC SPECIES
FILE REFERENCE: JHU1120-9
CURRENT APPLICATION NUMBER: US/09/378,238
CURRENT FILING DATE: 1999-08-19
EARLIER APPLICATION NUMBER: 08/795,071
EARLIER APPLICATION NUMBER: 08/795,071
EARLIER APPLICATION NUMBER: 08/525,596
EARLIER APPLICATION NUMBER: PCT/US94/03019
EARLIER APPLICATION NUMBER: PCT/US94/03019
EARLIER APPLICATION NUMBER: 08/033,923
EARLIER FILING DATE: 1994-03-18
EARLIER FILING DATE: 1993-03-19
Patent No. 6465239
GENERAL INFORMATION:
APPLICANT: Lee, Se-Jin
APPLICANT: McPherron, Alexandra C.
TITLE OF INVENTION: GROWTH DIFFERENTIATION FA
TITLE OF INVENTION: ACID AND POLYPEPTIDES FROM FILE REFERENCE: JHU1120-9
CURRENT APPLICATION:
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LENGTH: 1
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Best Local
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09-378-238-2
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92; Conservative
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Pred. No.
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Pred. No. 6.7e-52;
; Mismatches 11;
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; SEQ ID NO 19
; LENGTH: 225
; TYPE: PRT
; ORGANISM: G
US-09-378-238-1
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US-08-525-596B-14
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Best Local
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                                                               INFORMATION
SEQUENCE (
                                                                                   NAME: Wetherell, Jr., Ph.D, J
REGISTRATION NUMBER: 31,678
REFERENCE/DOCKET NUMBER: 0726
TELECOMMUNICATION INFORMATION:
TELEPHONE: 619-678-5070
TELEFAX: 619-678-5099
                                                                                                                                                                                     SOFTWARE: FastSEQ for W
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/(
FILING DATE: 19-SEP-199)
CLASSIFICATION: 514
PRIOR APPLICATION DATA:
        MOLECULE
FRAGMENT
                                                                                                                                                                                                                                                                                      ZIP: 9
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CORRESPON
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APPLICATION NUMBER: 08/795,071
FILING DATE: 1997-02-05
APPLICATION NUMBER: 08/525,596
FILING DATE: 1995-10-25
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OF SEQ ID NOS: 41
E: FastSEQ for Windows V
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2; Conservative
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ING SYSTEM:
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-19
         TYPE:
                                                               CHARACTERISTICS:
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                                                                                                                                                                                                                                                                                                                                                                                                                                     Application US/08525596B 827733
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                                                                                                                                                  TION NUMBER: PCT/IDATE: 08-JUL-1994
AGENT INFORMATION:
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7: 514
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Pred. No. 1.4e-51;
1; Mismatches 11;
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US-08-765-875-5
                                                                                                                                                                                                                            REGISTRATION NUMBER: P-38,347
REFERENCE/DOCKET NUMBER: PD36
TELECOMMUNICATION INFORMATION:
TELEPHONE: 619/455-5100
TELEFAX: 619/455-5110
INFORMATION FOR SEQ ID NO: 5:
SEQUENCE CHARACTERISTICS:
                                                                       Query Match
                                                            Best
                                                  Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Patent No. 5914234
GENERAL INFORMATION:
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Best Local
                                                                                                 08-765-
                                                                                                                                                         TOPOLOGY: 1i
MOLECULE TYPE:
IMMEDIATE SOURC
                                                                                                                                                                                                                                                                                                            ATTORNEY/AGENT INFORMATION:
NAME: TUMARKIN PH.D., LI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy
COMPUTER: IBM PC com
                                                                                                                                                                                                                                                                                                                                                               PRIOR APPLICATION DATA:
APPLICATION NUMBER:
FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                    SOFTWARE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            APPLICANT: MCPHERRON, ALEXANDRA C.
TITLE OF INVENTION: GROWTH DIFFERENTIATION
NUMBER OF SEQUENCES: 9
CORRESPONDENCE ADDRESS:
                                                                                                                                  FEATURE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            APPLICANT:
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                                                                                                LOCATION: 765-875-5
                                                           Local
                                                                                                                                                                                                                                                                                                                                       APPLICATION NUMBER: US/0 FILING DATE: 08-JUL-1994
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ZIP:
                                                                                                                      NAME/KEY:
                                                                                                                                              CLONE:
                                                                                                                                                                                                                                                                                                                                                                                                   CLASSIFICATION:
                                                                                                                                                                                                          TYPE:
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                                                                                                                                                                                              STRANDEDNESS:
                                                                                                                                                                                                                    LENGTH:
                                                                                                                                                                                                                                                                                                                                                                                                                        APPLICATION NUMBER:
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PKVSASHL-,---EAGPCCTPTKMSPINMLYFNGKEQIIYGKIPAMVVDRCGCS
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5. 5914234
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                                                                                                                                                                                                                                                                                                                                                                                                                                 M TYPE: Floppy disk
TER: IBM PC compatible
TING SYSTEM: PC-DOS/MS-DOS
ARE: PatentIn Release #1.0,
APPLICATION DATA:
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CALIFORNIA
                                                            Similarity
                                                                                                                                                                                                          amino acid
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                                                                                                                                                          SOURCE:
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1880 CENTURY
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                                               Score 501; DB 2;
Pred. No. 2.5e-51;
1; Mismatches 11;
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Pred. No. 2.5e-51;
l; Mismatches 11;
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RESULT 10
US-09-177-860A-14
; Sequence 14, Application US/0; Patent No. 6096506
; Patent No. 6096506
; GENERAL INFORMATION:
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US-08-795-671-5
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US-08-795-671-
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FILING DATE: Februarion: 800
CLASSIFICATION: 800
ATTORNEY/AGENT INFORMATION:
NAME: HAILE, PH.D., LISA A.
REGISTRATION NUMBER: 38,347
REFERENCE/DOCKET NUMBER: 07265/106001
TELECOMMUNICATION INFORMATION:
TELEPHONE: 619/678-5070
TELEPHONE: 619/678-5099
TOR SEQ ID NO: 5:
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Patent No.
GENERAL II
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Best Local
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APPLICANT: Huy
APPLICANT: Lee
TITLE OF INVENT
NUMBER OF SEQUE
CORRESPONDENCE
                                                                                                                                                                                                                                                                                                                              CLONE:
FEATURE:
NAME/KEY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         COMPUTER READABLE FORM:

MEDIUM TYPE: Floppy disk

COMPUTER: IBM PC compatible

OPERATING SYSTEM: PC-DOS/MS-DOS

SOFTWARE: Patentin Release #1.0,

CURRENT APPLICATION DATA:
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ADDRESSEE: Fish & Ri
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CITY: 1
STATE:
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TOPOLOGY
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           ': Lee, Se-Jin
INVENTION: ANTIBODIES
'SEQUENCES: 32
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                                                                                                                                                                                                                                                                                                                                                                                 TYPE:
                                                                          Application US/09177860A
096506
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                         SPECIFIC
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                        FOR GROWTH DIFFERENTIATION FACTOR-8
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TYPE: amino a

TOPOLOGY: lin

MOLECULE TYPE:

FRAGMENT TYPE:
US-09-177-860A-14
                                                                                                                                                                                                                                 patent No. 6369201; GENERAL INFORMATION:
APPLICANT: Barker, Christopher A.
APPLICANT: Morsey, Mohamad
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                                                        ; ORGANISM: H
US-09-252-149B-
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TELEFAX: 858-07,
INFORMATION FOR SEQ ID NO: 14
SEQUENCE CHARACTERISTICS:
FONGTH: 375 amino acids
                                                                                            PRIOR APPLICATION NUMBER: 60/07
PRIOR FILING DATE: 1998-02-19
NUMBER OF SEQ ID NOS: 39
SOFTWARE: Patentin Ver. 2.0
SEQ ID NO 29
LENGTH: 375
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
Best Local
               Query Match
Best Local
   Matches
                                                                                                                                                                              APPLICANT: Morsey, Mohamad
TITLE OF INVENTION: IMMUNOLOGICAL METHODS
TITLE OF INVENTION: VERTEBRATE SUBJECTS
FILE REFERENCE: 9001-0042
CURRENT APPLICATION NUMBER: US/09/252,149B
CURRENT FILING DATE: 1999-02-18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         NAME: Haile, Ph.D, Lisa A.
REGISTRATION NUMBER: 38,347
REFERENCE/DOCKET NUMBER: 0726
TELECOMMUNICATION INFORMATION:
TELEPHONE: 858-677-1456
TELEFAX: 858-677-1465
                                                                                   TYPE: PRT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             APPLICATION NUMBER: 08/525,596 FILING DATE: 19-SEP-1995 ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SOFTWARE: FastSEQ for Windows CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/09/177,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   COMPUTER READABLE FORM: MEDIUM TYPE: Diskett
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ZIP: 92121
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CLASSIFICATION:
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OPERATING SYSTEM:
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STATE: CA
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Similarity 80.7%;
32; Conservative
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80.4%;
ilarity 80.7%;
Conservative
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Score 501; DB 4;
Pred. No. 2.5e-51;
1; Mismatches 11;
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e, Suite 1600
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RESULT 12
US-09-252-149B-3
Sequence 32, I
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US-09-252-149B-3
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; ORGANISM: S
US-09-252-149B-
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                     QУ
                                                                                      ; ORGANISM: Gallus US-09-252-149B-34
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SEQ ID NO 32
LENGTH: 375
                                                                                                         SOFTWARE: Pata
SEQ ID NO 34
LENGTH: 375
TYPE: PRT
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Best Local
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Best Local :
                                            Matches
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PRIOR APPLICATION NUMBER: 60/075,213
PRIOR FILING DATE: 1998-02-19
NUMBER OF SEQ ID NOS: 39
SOFTWARE: Patentin
                                                                                                                                                                     FILE REFERENCE: 9001-0042

FILE REFERENCE: 9001-0042

CURRENT APPLICATION NUMBER: US/09/252,149B

CURRENT FILING DATE: 1999-02-18

CURRENT FILING NUMBER: 60/075,213
                                                                                                                                                    PRIOR APPLICATION NUMBER: 60/
PRIOR FILING DATE: 1998-02-19
NUMBER OF SEQ ID NOS: 39
                                                                                                                                                                                                                      APPLICANT: Morsey, Mohamad
TITLE OF INVENTION: IMMUNOLOGICAL METHODS
TITLE OF INVENTION: VERTEBRATE SUBJECTS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CURRENT APPLICATION NUMBER: CURRENT FILING DATE: 1999-
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                                                                                                                                                                                                                                                                   INFORMATION:
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INVENTION: IMMUNOLOGICAL METHODS
INVENTION: VERTEBRATE SUBJECTS
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Pred. No. 2.5e-51;
1; Mismatches 11;
                                          Score 501; DB 4;
Pred. No. 2.5e-51;
1; Mismatches 11;
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RESULT 15
US-09-378-238-14
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US-09-252-149B-35
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APPLICANT: Morsey, Mohamad

TITLE OF INVENTION: IMMUNOLOGICAL METHODS TO

TITLE OF INVENTICN: VERTEBRATE SUBJECTS

FILE REFERENCE: 9001-0042

CURRENT APPLICATION NUMBER: US/09/252,149B

CURRENT FILING DATE: 1999-02-18

PRIOR APPLICATION NUMBER: 60/075,213

PRIOR FILING DATE: 1998-02-19
                                                                                                                                                    CURRENT FILING DATE: 1999-08-19
EARLIER APPLICATION NUMBER: 08/795,071
EARLIER FILING DATE: 1997-02-05
EARLIER APPLICATION NUMBER: 08/525,596
EARLIER FILING DATE: 1995-10-25
EARLIER APPLICATION NUMBER: PCT/US94/03019
EARLIER FILING DATE: 1994-03-18
EARLIER APPLICATION NUMBER: 08/033,923
EARLIER FILING DATE: 1993-03-19
NUMBER OF SEQ ID NOS: 41
                                                                                                                                                                                                                                                                                                   Patent No. 6465239
GENERAL INFORMATION:
APPLICANT: Lee, Se-Jin
APPLICANT: Lee, Se-Jin
APPLICANT: McPherron, Alexandra C.
TITLE OF INVENTION: GROWTH DIFFERENTIATION FACTOR-8 NUCLEIC
TITLE OF INVENTION: ACID AND POLYPEPTIDES FROM AQUATIC SPECIES
TITLE OF INVENTION: TRANSGENIC AQUATIC SPECIES
FILE REFERENCE: JHU1120-9
CURRENT APPLICATION NUMBER: US/09/378,238
                   Query Match
Best Local
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Search completed: March 25, 2003, 15:13:30 Job time: 15 secs

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US-09-841-730-8
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equence 4, A	equence 22,	Sequence 20, Appl	equence 24, 1	equence 46, 1	Sequence 20, App	20,	Sequence 317, Ap	equence 8, A	equence 27,	equence	ω ω ,	Sequenc	6,	2	25,	Sequence 4,	4,	equence 20,	equence	equence 12,	Sequence 2, App	equence 19, Ap	10, Appl	Sequence 5, Ap	Sequence 31, Appl

ALIGNMENTS

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RESULT 1
US-09-859-211-6
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CURRENT APPLICATION NUMBER: US/09/859,211
CURRENT FILING DATE: 2001-05-15
PRIOR APPLICATION NUMBER: 09/019,070
PRIOR FILING DATE: 1998-02-05
PRIOR APPLICATION NUMBER: 08/862,445
PRIOR FILING DATE: 1997-05-23
PRIOR APPLICATION NUMBER: 08/847,910
PRIOR APPLICATION NUMBER: 08/847,910
PRIOR FILING DATE: 1997-04-28
PRIOR FILING DATE: 1997-02-05
PRIOR APPLICATION NUMBER: 08/525,596
PRIOR APPLICATION NUMBER: 08/525,596
PRIOR APPLICATION NUMBER: PCT/US94/03019
PRIOR APPLICATION NUMBER: PCT/US94/03019
PRIOR APPLICATION NUMBER: 08/033,923
PRIOR FILING DATE: 1993-03-19
NUMBER OF SEQ ID NOS: 51
SOFTWARE: FastSEQ for Windows Version 4.0
                                                                                                          Query Match
Best Local
Matches
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LENGTH: 12
TYPE: PRT
ORGANISM:
S-09-859-211-
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APPLICANT: Lee, Se-
APPLICANT: McPherr
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ICANT: McPherron, Alexandra C.
E OF INVENTION: GROWTH DIFFERENTIATION FACTOR-8
REFERENCE: 07265/144001
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Pred. No. 1.7e-43;
1; Mismatches 11
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RESULT 2
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CURRENT APPLICATION NUMBER: US/09/859,211
CURRENT FILING DATE: 2001-05-15
PRIOR APPLICATION NUMBER: 09/019,070
PRIOR FILING DATE: 1998-02-05
PRIOR APPLICATION NUMBER: 08/862,445
PRIOR APPLICATION NUMBER: 08/847,910
PRIOR FILING DATE: 1997-04-28
PRIOR APPLICATION NUMBER: 08/795,071
PRIOR APPLICATION NUMBER: 08/795,071
PRIOR APPLICATION NUMBER: 08/525,596
PRIOR APPLICATION NUMBER: 08/525,596
PRIOR APPLICATION NUMBER: PCT/US94/03019
PRIOR FILING DATE: 1994-03-18
PRIOR APPLICATION NUMBER: 08/033,923
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PRIOR APPLICATION NUMBER: 08/862,445
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9-859-211-33
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R APPLICATION NUMBER: 08/03
R FILING DATE: 1993-03-19
ER OF SEQ ID NOS: 51
WARE: FastSEQ for Windows 1
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ICANT: McPherron, Alexa
E OF INVENTION: GROWTH D
REFERENCE: 07265/144001
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E OF INVENTION: GROWTH D
REFERENCE: 07265/144001
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                           FILING DATE:
                                           FILING DATE: 1997-0 APPLICATION NUMBER:
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US20020157125A1
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NUMBER: F
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                                            08/525,596
               PCT/US94/03019
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APPLICANT: Lee, Se-Jin
APPLICANT: Lee, Se-Jin
APPLICANT: McPherron, Alexandra C.
TITLE OF INVENTION: GROWTH DIFFERENTIATION FACTOR RECEPTORS,
TITLE OF INVENTION: AGONISTS AND ANTAGONISTS THEREOF, AND METH
FILE REFERENCE: JHU1470-2
CURRENT APPLICATION NUMBER: US/09/841,730
CURRENT FILING DATE: 2001-04-24
PRIOR APPLICATION NUMBER: 09/626,896
PRIOR FILING DATE: 2000-07-27
PRIOR FILING DATE: 2000-07-27
PRIOR FILING DATE: 2000-01-31
PRIOR APPLICATION NUMBER: PCT/US98/15598
PRIOR FILING DATE: 1998-07-28
PRIOR APPLICATION NUMBER: 60/054,461
PRIOR APPLICATION NUMBER: 60/054,461
PRIOR FILING DATE: 1997-08-01
NUMBER OF SEQ ID NOS: 29
SOFTWARE: FastSEQ for Windows Version 4.0
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; PRIOR FILING
; NUMBER OF SEQ
; SOFTWARE: Fas
; SEQ ID NO 35
; LENGTH: 226
; TYPE: PRT
; ORGANISM: Ga
US-09-859-211-35
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US-09-841-730-
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US-09-841-730-
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US-09-841-730-
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 GENERAL INFORMATION:
APPLICANT: Lee, Se-J
APPLICANT: McPherro
TITLE OF INVENTION:
TITLE OF INVENTION:
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Patent No
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TYPE: PRT
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: McPherron, Alexandra C.
INVENTION: GROWTH DIFFERENTIATION FACTOR RECEPTORS,
INVENTION: AGONISTS AND ANTAGONISTS THEREOF, AND M
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CURRENT FILING DATE: 2001-04-24
PRIOR APPLICATION NUMBER: 09/626,896
PRIOR FILING DATE: 2000-07-27
PRIOR APPLICATION NUMBER: 09/485,046
PRIOR FILING DATE: 2000-01-31
PRIOR APPLICATION NUMBER: PCT/US98/15598
PRIOR FILING DATE: 1998-07-28
PRIOR APPLICATION NUMBER: 60/054,461
PRIOR APPLICATION NUMBER: 60/054,461
PRIOR FILING DATE: 1997-08-01
NUMBER OF SEQ ID NOS: 29
SOFTWARE: FastSEQ for Windows Version 4.0
                                                                                                                                                                                                                                                                                              CURRENT APPLICATION NUMBER: US/09/841,730
CURRENT FILING DATE: 2001-04-24
PRIOR APPLICATION NUMBER: 09/626,896
PRIOR FILING DATE: 2000-07-27
PRIOR APPLICATION NUMBER: 09/485,046
PRIOR FILING DATE: 2000-01-31
PRIOR APPLICATION NUMBER: PCT/US98/15598
PRIOR FILING DATE: 1998-07-28
PRIOR APPLICATION NUMBER: 60/054,461
PRIOR FILING DATE: 1997-08-01
NUMBER OF SEQ ID NOS: 29
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Best Local Similarity 80.7
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                                                                                                                                    Matches
                                                                                                                                                                Query Match
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APPLICANT: Lee, Se-Jin
APPLICANT: McPherron,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TITLE OF INVENTION: GROWTH DIFFERENTIATION FACTOR RECEPTORS, TITLE OF INVENTION: AGONISTS AND ANTAGONISTS THEREOF, AND NEILE REFERENCE: JHU1470-2
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TYPE: PRT
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61 PKVSASHL-----EAGPCCTPTKMSPINMLYFNGKEQIIYGKIPAMVVDRCGCS 109
                                                                                                                                                  Local
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Pred. No. 4.9e-43;
L; Mismatches 11
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US-09-841-730-1
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US-09-859-211-J
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Patent No.
                                      SOFTWARE: Fas
SEQ ID NO 14
SEQ TO NO 14
                                                                                                                                                                                                                                                                                                                                                                                      Sequence 14, Application US/09859211 Patent No. US20020157125A1 GENERAL INFORMATION:
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Best Local
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SOFTWARE: Fas
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TITLE OF INVENTION: GROWTH DIFFERENTIATION FACTOR RECEPTORS,
TITLE OF INVENTION: AGONISTS AND ANTAGONISTS THEREOF, AND A
FILE REFERENCE: JHU1470-2
CURRENT APPLICATION NUMBER: US/09/841,730
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APPLICANT: McPherron, Alexandra
TITLE OF INVENTION: GROWTH DIFFER
FILE REFERENCE: 07265/144001
CURRENT APPLICATION NUMBER: US/09
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          LENGTH: 37
TYPE: PRT
ORGANISM:
                                                                                   NUMBER
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                                                R FILING DATE: 1997-05
R APPLICATION NUMBER:
R FILING DATE: 1997-04
R APPLICATION NUMBER:
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APPLICATION NUMBER: 09/626,896
FILING DATE: 2000-07-27
APPLICATION NUMBER: 09/485,046
FILING DATE: 2000-01-31
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   FILING DATE: 2000-01-31
APPLICATION NUMBER: PCT/US98/15598
FILING DATE: 1998-07-28
APPLICATION NUMBER: 60/054,461
FILING DATE: 1997-08-01
                                                                                                   AFFILING DATE: 1995-10-20
APPLICATION NUMBER: PCT/US94/03019
FILING DATE: 1994-03-18
FILING DATE: 1994-03-18
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FILING DATE: 1998-02-05
APPLICATION NUMBER: 08/8
FILING DATE: 1997-05-23
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US20020157126A1
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ICATION NUMBER: 08/5,
ICATION NUMBER: 08/5,
ICATE: 1995-10-26
Homo sapiens
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                                                                                                                                                                 NUMBER: 08/847,910: 1997-04-28: NUMBER: 08/795,071: 1997-02-05: NUMBER: 08/525,596: NUMBER: 08/525,596
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1998-02-05
NIMBER: 08/862,445
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ER: 09/019,070
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                                                                     Version 4.0
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Pred. No. 4.9e-43;
1; Mismatches 11;
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US-09-859-211-23
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PRIOR APPLICATION NUMBER: 08/525,596
PRIOR FILING DATE: 1995-10-26
PRIOR APPLICATION NUMBER: PCT/US94/03019
PRIOR FILING DATE: 1994-03-18
PRIOR APPLICATION NUMBER: 08/033,923
PRIOR FILING DATE: 1993-03-19
NUMBER OF SEQ ID NOS: 51
SOFTWARE: FastSEQ for Windows Version 4.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CURRENT APPLICATION NUMBER: US/09/859,211
CURRENT FILING DATE: 2001-05-15
PRIOR APPLICATION NUMBER: 09/019,070
PRIOR FILING DATE: 1998-02-05
PRIOR APPLICATION NUMBER: 08/862,445
PRIOR APPLICATION NUMBER: 08/847,910
PRIOR APPLICATION NUMBER: 08/847,910
PRIOR FILING DATE: 1997-04-28
PRIOR APPLICATION NUMBER: 08/795,071
PRIOR APPLICATION NUMBER: 08/795,071
PRIOR APPLICATION NUMBER: 08/525,596
      GENERAL INFORMATION:

APPLICANT: Lee, Se-Jin
APPLICANT: McPherron, Alexandra C.
TITLE OF INVENTION: GROWTH DIFFERENTIATION FACTOR-8
FILE REFERENCE: 07265/144001
CURRENT APPLICATION NUMBER: US/09/859,211
CURRENT FILING DATE: 2001-05-15
PRIOR APPLICATION NUMBER: 09/019,070
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Best Local
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Best Local
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APPLICANT: Lee, Se-Jin
APPLICANT: McPherron, Alexandra C.
APPLICANT: McPherron, Alexandra C.
TITLE OF INVENTION: GROWTH DIFFERENTIATION FACTOR-8
TITLE OF INVENTION: GROWTH DIFFERENTIATION FACTOR-8
TITLE REFERENCE: 07265/144001
PRIOR FILING DATE:
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                                                                                                                                                                      27, Application US/09859211
b. US20020157125A1
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Pred. No. 4.9e-43;
1; Mismatches 11;
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4.9e-43;
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GENERAL
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LENGTH: 375
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R APPLICATION NUMBER: 08/862,445

OR APPLICATION NUMBER: 08/862,445

OR APPLICATION NUMBER: 08/847,910

OR APPLICATION NUMBER: 08/795,071

OR APPLICATION NUMBER: 08/795,071

OR APPLICATION NUMBER: 08/525,596
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OR FILING DATE: 1997-05-23

OR APPLICATION NUMBER: 08/847,910

OR FILING DATE: 1997-04-28

OR APPLICATION NUMBER: 08/795,071

OR FILING DATE: 1997-02-05

OR APPLICATION NUMBER: 08/525,596

OR FILING DATE: 1995-10-26

OR APPLICATION NUMBER: PCT/US94/03019

OR FILING DATE: 1994-03-18
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FILING DATE: 1995-10-26
APPLICATION NUMBER: PCT/US94/03019
FILING DATE: 1994-03-18
APPLICATION NUMBER: 08/033,923
FILING DATE: 1993-03-19
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APPLICATION NUMBER: 08/033,923
FILING DATE: 1993-03-19
R OF SEQ ID NOS: 51
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2 ID NOS: 51
2+SEQ for Windows Version 4.0
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WIH DIFFERENTIATION FACTOR-8
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                                               Score 501; DB 9; I
Pred. No. 4.9e-43;
L; Mismatches 11;
                                                                         Length 375;
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  -VFLQKY 321
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RESULT 12
US-09-454-540-5
; Sequence 5, Application US/09454540
parent No. US20010053358A1
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; LOCATION:
US-09-454-540-5
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                                  RESULT 13
US-09-841-730-4
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                                                                                                                                                                                                                                                                                                                                                           NAME: HAILE, PH.D., LISA A.
REGISTRATION NUMBER: 38,347
REFERENCE/DOCKET NUMBER: 07265/106001
TELECOMMUNICATION INFORMATION:
TELEPHONE: 619/678-5070
TELEFAX: 619/678-5099
INFORMATION FOR SEQ ID NO: 5:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                         Query Match
Best Local
Sequence 4, Application US Patent No. US20020157126A1 GENERAL INFORMATION:
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TOPOLOGY: 111
MOLECULE TYPE:
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COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
COMPUTER: IBM PC compatible
PC-DOS/MS-DOS
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CORRESPONDENCE ADDRESS:
ADDRESSEE: Fish & Richardson P
STREET: 4225 Executive Square,
                                                                                                                                                                                                                                                                                                                                                                                                                                                             FILING DATE: F
CLASSIFICATION:
ATTORNEY/AGENT IN
                                                                                                                                                                                                                                                                     IMMEDIATE SOURCE:
CLONE: GDF-8
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STATE: Californ
COUNTRY: US
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/ENTION: GROWTH DIFFERENTIATION FA
QUENCES: 9
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06-DEC-1999
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6, 1997
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Pred. No. 4.9e-43;
; Mismatches 11;
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Suite 1400
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APPLICANT: Lee, Se-Jin

APPLICANT: Lee, Se-Jin

APPLICANT: McPherron, Alexandra C.

TITLE OF INVENTION: GROWTH DIFFERENTIATION FACTOR RECEPTORS,

TITLE OF INVENTION: AGONISTS AND ANTAGONISTS THEREOF, AND METH

FILE REFERENCE: JHU1470-2

CURRENT APPLICATION NUMBER: US/09/841,730

CURRENT FILING DATE: 2001-04-24

PRIOR APPLICATION NUMBER: 09/626,896

PRIOR FILING DATE: 2000-07-27

PRIOR APPLICATION NUMBER: 09/485,046

PRIOR APPLICATION NUMBER: PCT/US98/15598

PRIOR APPLICATION NUMBER: PCT/US98/15598

PRIOR APPLICATION NUMBER: 60/054,461

PRIOR APPLICATION NUMBER: 60/054,461

PRIOR FILING DATE: 1997-08-01
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         APPLICANT: Lee, Se-Jin

APPLICANT: McPherron, Alexandra C.

TITLE OF INVENTION: GROWTH DIFFERENTIATION FACTOR RECEPTORS,

TITLE OF INVENTION: AGONISTS AND ANTAGONISTS THEREOF, AND METHODS OF CURRENT APPLICATION NUMBER: US/09/841,730

CURRENT FILING DATE: 2001-04-24

PRIOR APPLICATION NUMBER: 09/626,896

PRIOR FILING DATE: 2000-07-27

PRIOR APPLICATION NUMBER: 09/485,046

PRIOR APPLICATION NUMBER: 09/485,046

PRIOR FILING DATE: 1908-07-28

PRIOR APPLICATION NUMBER: PCT/US98/15598

PRIOR APPLICATION NUMBER: 60/054,461

PRIOR APPLICATION NUMBER: 60/054,461

PRIOR FILING DATE: 1997-08-01

NUMBER OF SEQ ID NOS: 29

SOFTWARE: FastSEQ for Windows Version 4.0
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US-09-8
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LENGTH: 3
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                                                                                                                    Query
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GENERAL INFORMATION GROWTH DIFFERENTIATION FACTOR-8
APPLICANT: Lee, Se-Jin
APPLICANT: McPherion, Alexandra C.
TITLE OF INVENTION: GROWTH DIFFERENTIATION FACTOR-8
FILE REFERENCE: 07265/144001
CURRENT FILING DATE: 2001-05-15
PRIOR APPLICATION NUMBER: 09/019,070
PRIOR FILING DATE: 1998-02-05
PRIOR APPLICATION NUMBER: 08/862,445
PRIOR APPLICATION NUMBER: 08/847,910
PRIOR FILING DATE: 1997-04-28
PRIOR APPLICATION NUMBER: 08/795,071
PRIOR APPLICATION NUMBER: 08/795,071
PRIOR FILING DATE: 1997-02-05
PRIOR FILING DATE: 1997-02-05
PRIOR FILING DATE: 1995-10-26
PRIOR APPLICATION NUMBER: PCT/US94/03019
PRIOR FILING DATE: 1994-03-18
PRIOR APPLICATION NUMBER: 08/033,923
PRIOR APPLICATION NUMBER: 08/033,923
PRIOR FILING DATE: 1993-03-19
NUMBER OF SEQ ID NOS: 51
SOFTWARE: FastSEQ for Windows Version 4.0
SEQ ID NO 12
LENGTH: 376
TYPE: PRT
ORGANISM: Mus musculus
US-09-859-211-12
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US-09-859-211-12
Search completed: March 25, Job time: 14 secs
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Best Local Similarity 80.7%;
Matches 92; Conservative
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1; Mismatches 11;
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ALIGNMENTS

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                                                                                                                                                                                                                                                                                                                      CC Comprising the 109 C-terminal amino acid residues of human CC comprising the 109 C-terminal amino acid residues 49-69 are CC growth differentiation factor 8 (GDF-8) in which residues 49-69 are CC replaced by the promiscuous tetanus toxin T-cell epitope P30 (see CC AAB20144). It is an object of the invention to produce a CC recombinant therapeutic vaccine that is capable of effecting CC down-regulation of GDF-8 in order to increase the muscle growth CC rate of farm animals. The vaccines (see AAB20145-53) are capable of breaking autotolerance against autologous GDF-8. They comprise CC the C-terminal portion of human GDF-8 in which a portion of the CC native sequence is replaced by a T-cell epitope such as P30, with CC the protein. Nucleic acids encoding the GDF-8 variants can be used CC for genetic immunisation of the animals. Down-regulation of GDF-8 cativity can increase muscle mass by up to at least 45% in cattle, CC pigs and poultry used for meat production, reducing the need for CC antibiotic feed-additives. Anti-GDF8 vaccines can be used to CC treat human diseases such as cancer cachexia where muscle atrophy is CC failure.
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85.2%; 42.9%;

Score 530.5; DB 2 Pred. No. 9.9e-50; Mismatches

DB 22;

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                                                                                                                                                                                                                                                                                                                               It sequence is that of AutoVac construct GDF-8 dimer 3 2 copies of the 109-amino acid C-terminal region of human Eferentiation factor 8 (GDF-8, see AAF20141) covalently through the P2 and P30 T-cell epitopes (see AAB20143-44) 3 toxin. It is an object of the invention to produce a stoxin. It is an object of the invention to produce a stoxin therapeutic vaccine that is capable of effecting lation of GDF-8 in order to increase the muscle growth lation of GDF-8 in order to increase the muscle growth arm animals. The vaccines (see AAB20145-53) are capable
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90..91
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/note= "109 C-terminal residues of human GDF-8"
110..124
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                "109 C-terminal residues of human
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                                                                                       isolate the GDF-8. The absolute conservation of the C-terminal region between species as evolutionary far apart as humans and chickens, baboons and turkeys, suggests that this region will be highly conserve in many other species as well.

GDF-8 has been shown to result in increased bone and muscle mass (such as ribs) when expressed in reduced amounts. GDF-8 minus transgenic animals and forms of animal feed that can inhibit/reduce production of GDF-8 are of commercial interest.

GDF-8 expression may also have a rola.
                 of muscle, bone or adipose tissue. A GDF-8 monoclonal antibody, GDF-8 antisense molecule or dominant negative polypeptide could be used with foetal or adult muscle cells, bone cells or progenitor cells. These agents can be administered to a patient suffering from a disorder such as muscle wasting disease, neuro muscular disorder, muscle atrophy, osteoporosis, bone degenerative diseases, obesity or other adipocyte cell disorders, and aging for example.
                                                                                                                                                                                                                                                                                   New diffe
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ovis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              growth differentiation factor; tissue growth; muscl cell differentiation; animal feed; muscle disorder; bone degeneration; nerve degeneration; GDF-8; devel transforming growth factor beta; TGF-beta.
                                                                                                                                                                                                                                                                                                                                                        Lee
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N-PSDB; AAZ06459.
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05-FEB-1998;
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Sequence
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           acid
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                standard;
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98US-0019070.
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                                                                                                                                                                                                                                                                                              factor
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  growth;
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e production of
                                                                                                                                                                             conserved
                                                                                                       growth
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Query

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RESULT 4
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                                                                                                                                      The present sequence comprises the 109 amino acid residue C-terminal region of human growth differentiation factor 8 (GDF-8), i.e. residues 267-375 of the full-length protein (see ABB20131). The homodimer of this region is thought to be the biologically active form of GDF-8. It is an object of the cinvention to produce a recombinant therapeutic vaccine capable of effecting down-regulation of GDF-8 in order to increase the muscle growth rate of farm animals. Variants of GDF-8 (see ABB20145-53) are provided that are capable of breaking autotolerance against cautologous GDF-8. These comprise the C-terminal portion of human GDF-8 in which a portion of the native sequence is replaced by a T-cell epitope such as the promiscuous tetanus toxin T-cell epitope C P2 or P30. The high number (9) of Cys residues in the C-terminal region limits the possible sites in which the T-cell epitope can be positioned without major disturbance of the native 3-dimensional structure of the profein Nucleic acids ancoding the GDF-8 variants
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Synthetic
                pronounced failure.
                                                                                                                                                                                                                                                                                                                                                                                                                                                  Increasing the muscle mass of animals used in meat production by down regulating growth differentiation factor 8 (GDF-8) activity in the animal through induction of anti-GDF-8 antibody production -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        WPI;
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                                                                                                                                                                                                                                                                                                                                                                                                                       Claim 17;
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26-JUL-1999;
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                                                treat
                                                             for antibiotic feed-additives.
                                                                                  cattle,
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                                            ture of the protein. Nucleic acids encoding the GDF-8 variants e used for genetic immunisation of the animals. Down-regulation F-8 activity can increase muscle mass by up to at least 45% in e, pigs and poultry used for meat production, reducing the need ntibiotic feed-additives. Anti-GDF8 vaccines can be used to human diseases such as cancer cachexia where muscle atrophy is
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   93
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muscle; meat; cachexia; cardiant; human; mutant; mutein.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            wth differentiation factor 8 C-terminal region.
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                                                                                                                                                                                                                                                                                                                                                                                                                       Page 93-94; 110pp; English.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Mouritsen S,
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99US-0145275.
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                              suffering from acute and chronic
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2; Mismatches 6
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                                                                                                                 Down-regulation
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                                                                                                   The present invention relates to muteins of a chain of a protein which, when in the form of a homodimer, has antagonistic or partial agonistic activity, and where the mutation results in the protein binding with low affinity to its receptor. The protein is a member of the transforming growth factor beta (TGFbeta) superfamily. The mutant sequences of the invention can be used in the treatment of diseases associated with the overexpression of TGFbeta family proteins, including ectopic bone formation, psoriasis, muscular atrophy, scar formation, fibrosis and cirrhosis. The present sequence is the human GDF8 protein.
                                                                                                                                                                                                        New mutein of transforming useful for treating or for recentor
                                                                                                                                                                                                                                             WPI;
                                                                                      Sequence
                                                                                                                                                                                                                                                                                                                                                                              Human; TGFbeta; transforming growth factor beta; agonist; ectopic bone formation; psoriasis; musc; formation; fibrosis; cirrhosis; osteopathic; ant: antifibrotic; hepatotropic; vulnerary; GDF8.
                                                                                                                                                                                          Disclosure; Fig 6; 54pp; German.
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                                                                                                                                                                                                  rul for treating or preventing receptor binding -
   PKVSASHL
                   2002-042559/06.
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                                                   Similarity 80. 92; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                       TGFbeta;
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  EAGPCCTPTKMSPINMLYFNGKEQIIYGKIPAMVVDRCGCS
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                                                                                                                                                                                                                                                                                                                                                                                                                                         entry)
                                                            80.4%;
80.7%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             80.4%;
                                                    Score 501; DB 23;
Pred. No. 6.2e-47;
1; Mismatches 11;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           109 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Score 501; DB 22;
Pred. No. 6.2e-47;
1; Mismatches 11;
                                                                                                                                                                                                                factor-beta superfamily protein e.g. ectopic bone formation, con
                                                                                                                                                                                                                                                                                                                                                                                                                        protein
                                                                                                                                                                                                                                                                                                                                                                                                                        GDF8
                                                                                                                                                                                                                                                                                                                                                                                    beta; mutant; anta-
muscular atrophy;
; antipsoriatic;
                                                                   Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length
                                                     Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Indels
                                                                     109;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     109;
                                                                                                                                                                                                                                                                                                                                                                                                      antagonist;
                                                   10;
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   109
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                                                                                                                                                                                                                                                                                                                                                                                              scar;
                                                                                                                                                                                                                 competes
                                                   Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gaps
                   55
                                    60
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AAW69883
ID AAW6
XX
AC AAW6
XX
DT 07-L
XX
DE Muri
XX
KW Grow
KW trar
KW neur
KW ther
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AAR63161
                                                                                                                      RESULT
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                                                                                                                                                                                                                Query Match
Best Local S
Matches 92
                                                                                                                                                                                                                                                                 GDF-8 can improve el related to
                                                                                                                                                                                                                                                                                                                  New growth diagnosis o
         therapy
                                                    Murine
                                                                    07-DEC-1998
                                                                                                     AAW69883
                                                                                                                                                                                                                                                 Sequence
                                                                                                                                                                                                                                                                                                                                                    WPI;
                                                                                    AAW69883;
                                                                                                                                                                                                                                                                                                                                                                     Lee
                                                                                                                                                                                                                                                                                                                                            Q-PSDB;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Mus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       adipocyte
                                                                                                                                                                                                                                                                                                                                                                                    ( OLYU)
                                                                                                                                                                                                                                                                                                                                                                                                     19-MAR-1993;
                                                                                                                                                                                                                                                                                                                                                                                                                      18-MAR-1994;
                                                                                                                                                                                                                                                                                                                                                                                                                                       29-SEP-1994.
                                                                                                                                                                                                                                                                                                                                                                                                                                                         WO9421681
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Growth di
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Mouse grov
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AAR63161;
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                                                                                                                                               73
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Growth differentiation factor-8; GDF-8; mouse; transgenic animal; transforming growth factor-beta; muscle; meat; inhibitor; obesity; neuromuscular disease; muscular dystrophy; cachexia; AIDS; cancer;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Disclosure; Page 41;
                                                                                                                                                                                                                                                                                                                                                                          PKVSASHL----EAGPCCTPTKMSPINMLYFNGKEQIIYGKIPAMVVDRCGCS 109
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        growth differentiation factor-8 C-terminal fragment
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 in be used to maintain cells before transplantation; to efficiency of cell fusion and to treat obesity or diseases to abnormal adipocyte proliferation.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                UNIV JOHNS HOPKINS SCHOOL MED.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Mcpherron AC;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                          imilarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        fferentiation factor-8;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        wth differentiation factor-8 partial sequence.
                                                                                                                                                                                                 tandard; Protein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      differentiation factor 8 - useful for treatment and of cell proliferative disorders esp. of muscle.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   316943/39.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     126 AA;
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                                                                                                                     (first
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (first entry)
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                                                                                                                     entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ion factor-8; GDF-8; cell proliferation;
transforming growth factor-beta.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        80.4%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  84pp; English.
                                                                                                                                                                                                  126
                                                                                                                                                                                                                                                                                                                                                                                                                                                    Score 501; DB 15;
Pred. No. 7.3e-47;
1; Mismatches 11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               126
                                                                                                                                                                                                  AA.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Length 126;
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                                                                                                                                                                                                                    This is the amino acid sequence of the C-terminal portion of mouse growth differentiation factor-8 (GDF-8), a novel member of the transforming growth factor-beta superfamily that appears to relate to various cell proliferative disorders, especially those involving muscle, nerve and adipose tissue. The sequence was deduced from a partial genomic clone (see AAV45809). A full-length sequence (see AAW45809) has been deduced from a cDNA clone (see AAV42113). The cinvention provides novel mammalian and avian GDF-8 proteins (see AAW6983-92). A transgenic non-human animal is claimed in which GDF-8 expression is disrupted or interfered with. Also claimed are: (1) chicken or turkey eggs or meat, beef, milk, pork and lamb from these animals; (2) method for increasing muscle mass in animals by administering an antibody (Ab) that binds to GDF-8; (3) canimals by administering an antibody (Ab) that binds to GDF-8; (3) cand encoding a GDF-8 protein truncated by loss of the C-terminal active fragment. The transgenic animals have increased muscle mass cand aging, particularly muscular diseases, muscular atrophy candition in a cachexia. Method (4) is used to treat cancer of muscle, consective tissue and bone, or obstructive lung disease, AIDS and cachexia. Method (4) is used to treat cancer of muscle, connective tissue and bone, or obstructive lung disease, AIDS can be used to maintain myoblasts intended for transplanting or to improve efficiency of fusion. Ab can be used to detect and calso for immunotherapy and in vivo imaging.
                                                                                                                                 Query Match
Best Local S
Matches 92
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Cleavage-site
Cleavage-site
Protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             23-MAY-1997;
05-FEB-1997;
28-APR-1997;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Transgenic animals with gene for growth differentiation factor-8 disrupted - have increased muscle and reduced cholesterol contents, also use of GDF-8 inhibitors for treating cancer, obesity, neuromuscular disease
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              06-AUG-1998.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Lee S,
                                                                                                                                                                                                Sequence
  73
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AAV45809
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2; Page 58; 125pp; English.
                                                                                                                                80.4%;
Similarity 80.7%;
2; Conservative
                                                                                                                                                                                                  126
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97US-0795071.
97US-0847910.
                                                                                                                                                                                                 AA;
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13..14
16..17
17..126
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              "mature polypeptide"
                                                                                                                               Score 501; DB 19;
Pred. No. 7.3e-47;
l; Mismatches 11
                                                                                                                                                               Length 126;
                                                                                                                                                                                                                                               monitoring)
                                                                                                                                 10;
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RESULT 8
AAY15386
ID AAY1
XX AAY1
AC AAY1
XX AAY1
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XX AAY1
XX AAY1
XX AAY1
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AAY15386
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                                                                                                                       Query Match
Best Local S
Matches 92
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           molecular GDF-8 has
                                                                                                                                                               GDF-8 are of commercial interest.

GDF-8 expression may also have a role in the therapy of abnormal growth of muscle, bone or adipose tissue. A GDF-8 monoclonal antibody, GDF-8 antisense molecule or dominant negative polypeptide could be used with foetal or adult muscle cells, bone cells or progenitor cells. These agents can be administered to a patient suffering from a disorder such as muscle wasting disease, neuro muscular disorder, muscle atrophy, osteoporosis, bone degenerative diseases, obesity or other adipocyte cell disorders, and aging for example.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 This is the amino acid sequence of the C-terminal region of the GDF-8 precursor protein. The predicted GDF-8 sequence contains two potential proteolytic processing sites. Cleavage of the precursor at the second of these sites would generate a mature C terminal fragment 109 amino acids in length with a predicted molecular weight of 12,400.
                                                                                                                                                                                                                                                                                                                                                                                                                                                    GDF-8 has been shown to result in as ribs) when expressed in reduced animals and forms of animal feed to
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 growth differentiation factor; tissue growth; muscle growth; cell differentiation; animal feed; muscle disorder; bone degeneration; nerve degeneration; GDF-8; development; transforming growth factor beta; TGF-beta.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      08-DEC-19
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       WPI; 1999~494289,
N~PSDB; AAZ06446
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05-FEB-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Cleavage-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             C-termina
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                                                                                                                     Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Example
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     New differentiation factor useful for treating neurodegenerative diseases
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (UYJO ) UNIV JOHNS HOPKINS SCHOOL MEDICINE:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2
                                  Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 99.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            -A1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        site
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    site
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 standard; Protein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           -494289/41.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Fig 2a; 138pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                n expressed in reduced amounts. GDF-8 minus transgeniforms of animal feed that can inhibit/reduce producticommercial interest.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (first entry)
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98US-0019070.
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13..14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /label= Potential_proteolytic_cleavage_site
/note= "cleavage generates mature protein"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /label=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  'label= Potential_proteolytic_cleavage_site
                          80.4%;
 Score 501; DB 20; Pred. No. 7.3e-47; l; Mismatches 11;
                                                              Length 126;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                transgenic
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92

Conservative

1 DFGLDCDEHSTESRCCRYPLTVDFEAFGWDWIIAPKRYKANYCSGECEFNNFTVSFWLRV 60

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RESULT 9
AAB73182
ID AAB7
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Best Local S
Matches 92
                                                                                                                                                                                                          The present invention relates to growth differentiation factor-8 (GDF-8) coding sequences and proteins. The present sequence is a GDF-8 protein, which was isolated in the present invention. GDF-8 is useful for treating neurodegenerative diseases (e.g. amyotrophic lateral sclerosis and muscular dystrophy), musculodegenerative diseases or in tissue repair due to trauma, obesity and disorders related to abnormal proliferation of adipocytes. GDF-8 is also useful for treating malignancies of the various organ systems, particularly cells in muscle or adipose tissues and in gene therapy for the treatment of cell proliferative or immunological diseases mediated by GDF-8. In addition, GDF-8 is also useful for treating muscle wasting disease, neuromuscular disorder, spinal cord injury, traumatic injury, congestive obstructive pulmonary disease (COPD), AIDS or cachexia.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 New substantially purified growth differentiation factor-8 polypeptide, useful for treating muscle wasting disease, obesity, muscular dystrophy, neuromuscular disorder, acquired immunodeficiency syndrome
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gene therapy; growth differentiation factor-8; GDF-8; AIDS; cachexi neurodegenerative disease; amyotrophic lateral sclerosis; obesity; muscular dystrophy; musculodegenerative disease; tissue repair; muscle wasting disease; neuromuscular disorder; spinal cord injury; traumatic injury; congestive obstructive pulmonary disease.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AAB73182 standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  dystrophy, nand cachexia
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           N-PSDB;
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                                                                                                                                                                               Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Example
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  61
                                     18
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                                   2001-211209/21.
)B; AAF63547.
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                                                                                                         92;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               McPherron AC;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2; Fig 2;
                                                                                                                           Similarity
                                                                                                                                                                               126
                                                                                                       Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2000WO-US22884.
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                                                                                                                                                                               AA;
 -EAGPCCTPTKMSPINMLYFNGKEQIIYGKIPAMVVDRCGCS 109
                                                                                                                                                                                                                                                                                                                                                                                                                                                               124pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Protein;
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                                                                                                                        80.48;
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                                                                                                                        Score
Pred.
                                                                                                        Mismatches
                                                                                                                            No.
                                                                                                                        501; DB 22;
No. 7.3e-47;
                                                                                                        11.
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                                                                                                        10;
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                                                                                                        Gaps
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9

В

PHTHLVHQANPRGSAGPCCTPTKMSPINMLYENGKEQIIYGKIPAMVVDRCGCS 130 PKVSASHL-----EAGPCCTPTKMSPINMLYFNGKEQIIYGKIPAMVVDRCGCS 109 DFGLDCDEHSTESRCCRYPLTVDFEAFGWDWIIAPKRYKANYCSGECEF-----VFLQKY 76

DFGLDCDEHSTESRCCRYPLTVDEEAFGWDWIIAPKRYKANYCSGECEFNNFTVSFWLRV 60

92;

Conservative

10;

Similarity

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RESULT 10
AAB73189
                                                                                                                                                          The present invention relates to growth differentiation factor-8 (GDF-8) coding sequences and proteins. The present sequence is a GDF-8 protein, which was isolated in the present invention. GDF-8 is useful for treating neurodegenerative diseases (e.g. amyotrophic lateral sclerosis and muscular dystrophy), musculodegenerative diseases or in tissue repair due to trauma, obesity and disorders related to abnormal proliferation of adipocytes. GDF-8 is also useful for treating malignancies of the various organ systems, particularly cells in muscle or adipose tissues and in gene therapy for the treatment of cell proliferative or immunological diseases mediated by GDF-8. In addition, GDF-8 is also useful for treating muscle wasting disease, neuromuscular disorder, spinal cord injury, traumatic injury, congestive obstructive pulmonary disease (COPD), AIDS or cachexia.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AAB73189;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          WPI;
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muscular dy
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                                                                                                              Sequence
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Example 9;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    dystrophy,
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            cachexia
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 therapy;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       standard; Protein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     apy; growth differentiation factor-8; GDF-8; AIDS; cachexinerative disease; amyotrophic lateral sclerosis; obesity; lystrophy; musculodegenerative disease; tissue repair; sting disease; neuromuscular disorder; spinal cord injury; injury; congestive obstructive pulmonary disease.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ntially purified growth differentiation factor-8 polypeptide, treating muscle wasting disease, obesity, muscular neuromuscular disorder, acquired immunodeficiency syndrome ia -
                                                                                                                     130 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Fig 2;
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                            80.4%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         130 AA.
Score 501; DB 22; Length 130; Pred. No. 7.5e-47; 1; Mismatches 11; Indels 1
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RESULT 11.
AAB20153
The present sequence is that of AutoVac construct GDF-8 ext, C which consists of the C-terminal 160 amino acids of human growth C differentiation factor 8 (GDF-8, see AAF20131) with residues 16-36 C substituted by the promiscuous tetanus toxin T-cell epitope P30 (see C AAB20144) and residues 37-51 substituted by tetanus toxin T-cell epitope P2 (see AAB20143). It is an object of the invention to produce a recombinant therapeutic vaccine that is capable of effecting down-regulation of GDF-8 in order to increase the muscle growth C of breaking autotolerance against autologous GDF-8. They comprise the C-terminal portion of human GDF-8 in which a portion of the native sequence is replaced by a T-cell epitope such as P30, with C mainimal disturbance of the authentic 3-dimensional structure of the protein. Nucleic acids encoding the GDF-8 variants can be used for genetic immunisation of the animals. Down-regulation of GDF-8 cactivity can increase muscle mass by up to at least 45% in cattle, pigs and poultry used for meat production, reducing the need for
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Growth different
T-cell epitope;
cardiant; human;
                                                                                                                                                                                                               Increasing the muscle mass of animals used in meat production regulating growth differentiation factor 8 (GDF-8) activity in animal through induction of anti-GDF-8 antibody production -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Key
Region
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26-JUL-1999;
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99US-0145275
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52..16
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mutant; mutein.
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37..51
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1..15
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GDF-8"
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cachexia;
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to true adipocytes

present invention relates to growth differentiation factor-8 (GDF-8) ing sequences and proteins. The present sequence is a GDF-8 protein, ch was isolated in the present invention. GDF-8 is useful for treating rodegenerative diseases (e.g. amyotrophic lateral sclerosis and cular dystrophy), musculodegenerative diseases or in tissue repair due trauma, obesity and disorders related to abnormal proliferation of pocytes. GDF-8 is also useful for treating malignancies of the various an systems, particularly cells in muscle or adipose tissues and in e therapy for the treatment of cell proliferative or immunological eases mediated by GDF-8. In addition, GDF-8 is also useful for ating muscle wasting disease, neuromuscular disorder, spinal cord

repair due

various

treating

which coding

Example

9; Fig

2;

124pp; English.

muscular

neurodegenerative diseases

gene the

treating injury, t (COPD), I

traumatic injury, AIDS or cachexia.

congestive

obstructive

pulmonary

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RESULT
AAB7318
ID AA
XX
AC AA
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AC AA
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Best Local S
Matches 97
                                                                                                                                                                                                                                                                                                                                                                   dystrophy, and cachex
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N-PSDB; A
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muscular
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AAB731
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                                                                                                                                                                                                                                                                                                                                                                                                                  seful
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                                                                                                                                                                                                                                                                                                                                                                                 substantially purified growth differentiation factor-8 polypeptide, ful for treating muscle wasting disease, obesity, muscular trophy, neuromuscular disorder, acquired immunodeficiency syndrome
                                                                                                                                                                                                                                                                                                                                                                   cachexia
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    rapy; growth differentiation factor-8; GDF-8; AIDS; cachexia; enerative disease; amyotrophic lateral sclerosis; obesity; dystrophy; musculodegenerative disease; tissue repair; asting disease; neuromuscular disorder; spinal cord injury; congestive obstructive pulmonary disease.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Growth differentiation vaccine; muscle; meat;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AAB20132;
                                         T-cell epitope such as the promiscuous tetanus toxin T-cell epitope p2 or p30. Nucleic acids encoding the GDF-8 variants can be used for genetic immunisation of the animals. Down-regulation of GDF-8 activity is used to increase muscle mass by up to at least 45% in cattle, pigs and poultry used for meat production, reducing the need for antibiotic feed-additives. Anti-GDF8 vaccines can be used to treat human diseases such as cancer cachexia where muscle atrophy is pronounced and for patients suffering from acute and chronic heart failure.
                                                                                                                                               The present sequence is that of turkey growth differentiation factors (GDF-8), also called myostatin. It is an object of the invention to produce a recombinant therapeutic vaccine capable of effecting down-regulation of GDF-8 in order to increase the muscle growth rate of farm animals. Variants of GDF-8 (see AAB20145-53) are provided that are capable of breaking autotolerance against autologous GDF-8. These comprise a C-terminal portion of human GDF-8 in which a portion of the native sequence is replaced by a
                                                                                                                                                                                                                                                                          Increasing the muscle mass of animals used in meat production by regulating growth differentiation factor 8 (GDF-8) activity in tianimal through induction of anti-GDF-8 antibody production -
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26-JUL-1999;
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99US-0145275
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cardiant; turkey.
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1.4e-46;
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myostatin
wasting di
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N-PSDB;
                                                                             The invention relates to a substantially purified growth differentiation factor (GDF) receptor, specifically a myostatin receptor, or its functional peptide portion. Also described is a method of modulating an effect of myostatin on a cell by contacting the cell with an agent that affects myostatin signal transduction in the cell. The method and the receptor are useful for ameliorating the severity of a pathological condition characterised by an abnormal amount, development or metabolic activity of muscle or adipose tissue in a subject, particularly a wasting disease) or a metabolic disorder (e.g. obesity or type II diabetes). The present sequence represents the amino acid sequence of chicken
                                                                                                                                                                                                                                                         New growth differentiation factor (GDF) receptors and modulators, useful for ameliorating wasting disorders such as cachexia, musculdystrophy or neuromuscular disease or a metabolic disorder such as
                                                                                                                                                                                                                                                                                                                                                                OLYU)
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BK15396.
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             80.4%;
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l; Mismatches
 Score 501; DB 23; Pred. No. 2.5e-46; 1; Mismatches 11;
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Search completed: March 25, Job time: 73 secs
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Best Local Similarity 80.7%;
Matches 92; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GDF-8 can be used to maintain cells before transplantation; to improve efficiency of cell fusion and to treat obesity or diseases related to abnormal adipocyte proliferation.
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Q-PSDB; Q76372.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Sequence
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Q90w05 sparus aura
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ALIGNMENTS

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RESULT 1
Q9TSY2
ID Q9TSY2;
AC Q9TSY2;
DT 01-MAY-2000 (TrEMBLrel. 1:
DT 01-MAY-2002 (TrEMBLrel. 1:
DT 01-JUN-2002 (TrEMBLrel. 1:
DT 01-MAY-2000 (TrEMBLRITY: BELONGS TO DE COMMENTAL 1:
DT 01-MAY-2000 (TREMBLRITY: BELONGS TO
    Query Match
Best Local S
Matches 92
                                                                                                             Stratil A., Kopecny M.;
"Genomic organization, sequence and postatin (GDF8; MSTN) gene.";
Anim. Genet. 30:468-470(1999).
-!- SIMILARITY: BELONGS TO THE TGF-BETEMBL; AJ237920; CAB40844.1; -.
HSSP; P18075; 1BMP.
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Tyota; Metazoa; Chordata; Craniata; Vertebrata;
Alia; Eutheria; Cetartiodactyla; Suina; Suidae;
TaxID=9823;
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20078370; PubMed=10612246;
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InterPro; IPR001839; TGFb_N.
InterPro; IPR001111; TGFb_N.
Pfam; PF00019; TGF-beta; 1.
Pfam; PF00688; TGFb_propeptide; 1
ProDom; PD000357; TGFb; 1.
SMART; SM00204; TGFB; 1.
PROSITE; PS00018; EF_HAND; UNKNOW PROSITE; PS00250; TGF_BETA_1; 1.
Glycoprotein.
SEQUENCE 375 AA; 42736 MW; 6F
Eukaryota; Metazoa; Chore
Mammælia; Eutheria; Prima
Cercopithecinae; Macaca.
NCBI_TaxID=9541;
[1]
SEQUENCE_FROM N A
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Q95J86;
Q1-DEC-2001
01-DEC-2001
01-JUN-2002
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Q9GM97;
Q1-MAR-2001
Q1-MAR-2001
Q1-JUN-2002
Myostatin.
MSTN.
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Submitted (OCT-1999) to the
-!- SIMILARITY: BELONGS TO
EMBL; AB033541; BAB16046.1;
HSSP; P18075; 1BMP.
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Macaca fascicularis
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Chordata; Craniata; V
Primates; Catarrhini;
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Vertebrata; Eutel
i; Cercopithecidae
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RESULT
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Best Local S
Matches 92
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Best Lo
Matche
                                                                                                                                                                  SEQUENCE FROM N.A.

Gu Z., Yang W., Cheng Z., Li H., Zhu D.;
Gu Z., Yang W., Cheng Z., Li H., Zhu D.;
"Molecular Cloning and Tissue Distribution of the Duck, Goose, Pigeon and Quail.";
Submitted (OCT-2001) to the EMBL/GenBank/DDBJ datembl; AF440863; AAL35277.1; -.

InterPro; IPR002048; EF-hand.
InterPro; IPR001839; TGFb.
InterPro; IPR001111; TGFb_N.
Pfam; PF00019; TGF-beta; 1.
                                                                                                                 Prodom; PF00688; TGFb_propeptide; 1.

Prodom; PD000357; TGFb; 1.

SMART; SM00204; TGFB; 1.

PROSITE; PS00018; EF_HAND; UNKNOWN PROSITE; PS00250; TGF_BETA_1; UNKNOWN SEQUENCE 375 AA.
                                                                                                                                                                                                                                                                                   Eukaryota; Metazo
Archosauria; Aves
NCBI_TaxID=8932;
[1]
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ProDom; PDC
PROSITE; PS
PROSITE; PS
Glycoprotei
SEQUENCE
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Q8UWD8;
01-MAR-2002
01-MAR-2002
01-JUN-2002
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InterPro;
InterPro;
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Pfam; PF000
Pfam; PF000
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L; AY05
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)2;
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)2;
                                       )0019; TGF-beta; 1.
)0688; TGFb_propeptide; 1.
)D000357; TGFb; 1.
PS00018; EF_HAND; UNKNOWN_1.
PS000250; TGF_BETA_1; UNKNOWN_
                                                                                                                     100204; TGFB; 1.
PS00018; EF_HAND; UNKNOWN_1.
PS00250; TGF_BETA_1; UNKNOWN_1.
375 AA; 42739 MW; 88296F0AE779476E
                                                                              imilarity 80.'
; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            imilarity 80.;
; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ein.
375 AA;
of the open reading frame DNA for macaque fascis macaque) myostatin (GDF8)."; (SEP-2001) to the EMBL/GenBank/DDBJ databases.RITY: BELONGS TO THE TGF-BETA FAMILY.

5750; AAL17640.1; -.

1PR002048; EF-hand.

1PR001839; TGFb.
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019; TGF-beta;
                                                                                                                                                                                                                                                                                                     Metazoa; Chordata; (
); Aves; Neognathae;
                                                                                                                                                                                                                                                                                                                                                      (TrEMBLrel. (TrEMBLrel. (TrEMBLrel.
                                                                                                                                                                                                                                                                                                                                                                                              PRELIMINARY;
                                                                                                                                                                                                                                                                                         (Domestic pigeon).
Jazoa; Chordata; Craniata; Vertebrata; Eutere
Meognathae; Columbiformes; Columbidae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  42722 MW;
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Last sequence update)
Last annotation updat
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                                                                               Score 501; DB 13;
Pred. No. 2e-52;
L; Mismatches 11;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2149B46AC7D446E7
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                                                                                                                       CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length 375;
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                                                                                                  Length 375;
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                                                                               10;
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RESULT 5
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SEQUENCE FROM N.A.

Gu 2., Yang W., Cheng 2., Li H., Zhu D.;

R Gu 2., Yang W., Cheng 2., Li H., Zhu D.;

P Molecular Cloning and Tissue Distribution of the Myostatir

P Duck, Goose, Pigeon and Quail.";

L Submitted (OCT-2001) to the EMBL/GenBank/DDBJ databases.

R EMBL; AF440864; AAL35278.1; -

R InterPro; IPR002048; EF-hand.

R InterPro; IPR001839; TGFb_N.

R Pfam; PF00019; TGF-beta; 1.

R Pfam; PF00688; TGFb_propeptide; 1.

R Pfam; PF00688; TGFb_propeptide; 1.

R ProDom; PD000357; TGFb; 1.

R SMART; SM00204; TGFB; 1.

R PROSITE; PS00018; EF_HAND; UNKNOWN_1.

R PROSITE; PS000250; TGF_BETA_1; UNKNOWN_1.

R PROSITE; PS00250; TGF_BETA_1; UNKNOWN_1.
                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
Best Local S
Matches 92
                                                                                                                                                                                                                     Q98SPO PRELIMINARY;
Q98SPO;
Q1-JUN-2001 (TrEMBLrel. ]
Q1-JUN-2001 (TrEMBLrel. ]
Q1-JUN-2002 (TrEMBLrel. ]
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Q8UWD7;
01-MAR-2002
01-MAR-2002
01-JUN-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Myostatin.
MSTN.
development.";
Submitted (FEB-2001) to the EMBL/GenBank/DDBJ databases
-!- SIMILARITY: BELONGS TO THE TGF-BETA FAMILY.
EMBL; AF346599; AAK18000.1; -.
HSSP; P18075; 1BMP.
InterPro; IPR002048; EF-hand.
InterPro; IPR001839; TGFb.
InterPro; IPR001111; TGFb_N.
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Eukaryota; Metazoa;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                NCBI_TaxID=46218;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Archosauria; Aves;
                                                                                       Zhang Y., Yang W., "Genomic structure development.":
                                                                                                                                                                  Archosauria; Aves;
                                                                                                                                                                            Gallus gallus
Eukaryota; Met
                                                                                                                                                                                                             Myostatin.
                                                                                                                     SEQUENCE FROM N.A.
                                                                                                                                             NCBI_TaxID=9031;
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Metazoa; Chordata;
a; Aves; Neognathae;
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                                                                                                                                                                                                                                                                                                                                                                                                                      80.4%; larity 80.7%; Conservative
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                                                                                         Zhu D.; and expression of the chicken GDF-8
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21,
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Last sequence update)
Last annotation update)
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Pred.
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                                                                                                                                                                                                                                                                       PRT;
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                                                                                                                                                                                                                                                                                                                                                                                                                                  2e-52;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               update)
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                                                                                                during
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RESULT 7
Q8UWD9
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Pfam; PF00688; TGFb_propeptide; 1.
ProDom; PD000357; TGFb; 1.
SMART; SM00204; TGFB; 1.
PROSITE; PS00018; EF_HAND; UNKNOWN_1.
PROSITE; PS00250; TGF_BETA_1; 1.
Glycoprotein.
SEQUENCE 375 AA; 42717 MW; D980E286
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Q8UWD9;
Q8UWD9;
Q1-MAR-2002
Q1-MAR-2002
Q1-JUN-2002
Q8UWE0;
Q8UWE0;
Q1-MAR-2002
Q1-MAR-2002
Q1-JUN-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SEQUENCE FROM N.A.

SEQUENCE FROM N.A.

Gu Z., Yang W., Cheng Z., Li H., Zhu D.;

Gu Z., Yang W., Cheng Z., Li H., Zhu D.;

Gu Z., Yang W., Cheng Z., Li H., Zhu D.;

Gu Z., Yang W., Cheng Z., Li H., Zhu D.;

Gu Z., Yang W., Cheng Z., Li H., Zhu D.;

"Molecular Cloning and Tissue Distribution of the Myostatin Gene
Duck, Goose, Pigeon and Quail.";

Submitted (OCT-2001) to the EMBL/GenBank/DDBJ databases.

EMBL; AF440862; AAL35276.1; -.

InterPro; IPR002048; EF-hand.

InterPro; IPR001839; TGFb.

InterPro; IPR001111; TGFb_N.

Defam; PF00019; TGF-beta; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Pfam; PF00688; TGFb_propeptide; 1.
ProDom; PD000357; TGFb; 1.
SMART; SM00204; TGFB; 1.
PROSITE; PS00018; EF_HAND; UNKNOWN_1.
PROSITE; PS00250; TGF_BETA_1; UNKNOWN_1.
SEQUENCE 375 AA; 42667 MW; 57DDE49D3AA2978C CRC64;
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MSTN.
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NCBI_TaxID=8843;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Eukaryota;
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                                                                                                                                                                                                                               PKVSASHL-----EAGPCCTPTKMSPINMLYFNGKEQIIYGKIPAMVVDRCGCS 109
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                92;
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   (TrEMBLrel. 20, (TrEMBLrel. 20, (TrEMBLrel. 21,
                                                                                                        PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Aves; Neognathae; Anseriformes; Anatidae; Anser.
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80.7%; Pred. No. 2.6e-52;
Live 1; Mismatches 11;
                                                                                                                                                                                                                                                                                                                                                                                                                                                 79.5%; Score 495; DB 13; Length 375; 79.8%; Pred. No. 1.1e-51; 11ve 1; Mismatches 12; Indels i 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Last sequence update)
Last annotation update)
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   Last sequence update)
Last annotation updat
                                                    Created)
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                                                                                                             PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         D980E286426E4D4F CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       375 AA.
                                                                                                             375 AA.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Length 375;
                                                                                                                                                                                                                                                                                                                                                                                                                                                    Indels i 10;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   10;
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DR DR
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DR
DR
DR
SQ
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17
              Qy
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  RESULT 9
                                       Query Match
Best Local Sin
Matches 90;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query
Best L
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gu Z., Yang W., Cheng Z., Li H., Zhu D.;
"Molecular Cloning and Tissue Distribution of the Myostati
Duck, Goose, Pigeon and Quail.";
Submitted (OCT-2001) to the EMBL/GenBank/DDBJ databases.
EMBL; AF440861; AAL35275.1; -.
RINterPro; IPR002048; EF-hand.
RINterPro; IPR001839; TGFb.
Refam; PF00019; TGF-beta; 1.
Refam; PF00688; TGFb_propeptide; 1.
Refam; PF00688; TGFb_propeptide; 1.
Refam; PF00688; TGFB; 1.
Refam; PF00018; EF_HAND; UNKNOWN_1.
Refore 375 AA; 42817 MW; 1BA7FF5225C23620 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                 Q8WNS6
Q8WNS6;
Q8WNS6;
Q1-MAR-2002 (TrEMBLrel. 2
Q1-MAR-2002 (TrEMBLrel. 2
Q1-JUN-2002 (TrEMBLrel. 2
                                                                                                                                                                                                                                                                                                                                                                             GDF8
                                                                                         Pfam; PF00019; TGF-beta; 1.

Pfam; PF00688; TGFb_propeptide; 1.

ProDom; PD000357; TGFb; 1.

SMART; SM00204; TGFB; 1.

PROSITE; PS00018; EF_HAND; UNKNOWN_1.

PROSITE; PS00250; TGF_BETA_1; UNKNOWN_SEQUENCE 375 AA; 42524 MW; 0EC2761
                                                                                                                                                                                 Shibata M., Muramoto T., Aikawa K.;
"Genomic organization and sequence of the myostatin gene submitted (DEC-2001) to the EMBL/GenBank/DDBJ databases.
EMBL; AB076403; BAB79498.1; -.
InterPro; IPR002048; EF-hand.
InterPro; IPR001839; TGFb.
InterPro; IPR001111; TGFb.N.
                                                                                                                                                                                                                                                                                                                  Bos taurus (Bovine).
Eukaryota; Metazoa; Chordata; Craniata;
Mammalia; Eutheria; Cetartiodactyla; Rur
Bovidae; Bovinae; Bos.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Archosauria; Ave
NCBI_TaxID=8839;
                                                                                                                                                                                                                                                                                                                                                                                        Myostatin.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Myostatin.
MSTN.
                                                                                                                                                                                                                                                                                                           NCBI_TaxID=9913;
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                                                                                                                                                                                                                                                                                  SEQUENCE
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Local
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  لمما
DFGLDCDEHSTESRCCRYPLTVDFEAFGWDWIIAPKRYKANYCSGECEFNNFTVSFWLRV 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DFGLDCDEHSTESRCCRYPLTVDFEAFGWDWIIAPKRYKANYCSEECEF--
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       HTHLVHQANPRGSAGPCCTPTKMSPINMLYFNGKEQIIYGKIPAMVVDRCGCS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             91;
                                        Similarity 78.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Similarity 79.
                                                                                                                                                                                                                                                                                  FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        rhynchos (Domestic duck).
Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
a; Aves; Neognathae; Anseriformes; Anatidae; Anas.
                                                                                                                                                                                                                                                                                                                                                                                                                                                         PRELIMINARY;
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                                                     78.7%;
78.9%;
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20,
21,
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Last annotation updat
                                         2;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Score 493; UB 1...
No. 1.8e-51;
                                                     Score 490;
Pred. No. 4.
                                                                                                                                                                                                                                                                                                                                                                                                                                                         PRT;
                                                                                           OEC27616C202F5E6 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Mismatches
                                         Mismatches
                                                                                                                                                                                                                                                                                                                                     Ruminantia;
                                                                                                                                                                                                                                                                                                                                                                                                                                                         375 AA.
                                                                                                                                                                                                                                                                                                                                                Vertebrata;
                                                                  DB
                                       .3e-51;
es 12;
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                                                                  Length 375;
                                                                                                                                                                                                                                                                                                                                     Pecora;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Length 375;
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                                         Indels
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                                                                                                                                                                                                                                                                                                                                     Bovoidea;
                                        10;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            10;
                                                                                                                                                                                                                                                       bovine.";
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                                       Gaps
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RESULT 10
Q95N11
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QУ
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Best Local
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Q9MZ18;
Q1-QCT-2000
Q1-QCT-2000
Q1-JUN-2002
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Eukaryota; N
Mammalia; Ex
Bovidae; Cap
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Q95N11;
Q1-DEC-2001
Q1-DEC-2001
Q1-JUN-2002
                                                                                                                                                   Myostatin
MSTN.
                                                                                                             Eukaryota;
Mammalia;
                                                                                                                                                                                                                                                                                                                                                                                                                                                           NON_TER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Lian Z., "Cloning
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      submitted
Lian Z., Jin H., Li N.; "Cloning of intron 2 of the myostatin gene in sheep."; "Cloning of intron 2 of the EMBL/GenBank/DDBJ databases Submitted (MAY-2000) to the EMBL/GenBank/DDBJ databases -!- SIMILARITY: BELONGS TO THE TGF-BETA FAMILY. EMBL; AF266758; AAF78069.1; -.
                                                                                                                                                                                                                                             œ
                                                                                                                                          Ovis aries
                                                                                                                                                                                                                                                                                                                                                                                                                                                SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Glycoprotein.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PROSITE;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          InterPro; IPR001111; TGFb_N.
Pfam; PF00019; TGF-beta; 1.
Pfam; PF00688; TGFb_propeptide;
ProDom; PD000357; TGFb; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           NCBI_TaxID=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Myostatin
                                                               SEQUENCE
                                                                                                   Bovidae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           InterPro;
                                                                                                                                                                                                                                                                                            322
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                                                                                                                                                                                                                                                                                                                                              79 DFGLDO
                                                                                                                                                                                                                                                                                                                                                                                                                       Match
                                                                                malia; Eutheria; Ceta:
idae; Caprinae; Ovis.
I_TaxID≃9940;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       n Z., Pan Q., Chen H., Jin H., Li N.; oning of intron 2 of the myostatin gene in goat."; mitted (APR-2001) to the EMBL/GenBank/DDBJ databas SIMILARITY: BELONGS TO THE TGF-BETA FAMILY. L; AY032689; AAK49790.1; -. erPro; IPR001839; TGFb.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PD000357; ps00250;
                                                                                                                                                                                                                                                                                                                                                                                                            Similarity
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                                                             FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovoidea
Caprinae; Capra.
D=9925;
                                                                                                                                                                 (Fragment).
                                                                                                                                                                                                                                                                                                                                                                                                                                               185
185 AA;
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                                                                                                              Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Sutheria; Cetartiodactyla; Ruminantia; Pecora; Bovoidea
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Fragment).
                                                                                                                                                                           (TrEMBLrel. 15, (TrEMBLrel. 15, )
                                                                                                                                      (Sheep).
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                              Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (Goat).
                                                                                                                                                                                                                               PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TGF_BETA_1; UNKNOWN_1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ; Cetartiodactyla; Ruminantia; Pecora; Bovoidea; Capra.
                                                                                                                                                                                                                                                                                                                                                                                                                                              185
20953 MW;
                                                                                                                                                                                                                                                                                                                                                                                                         78.2%;
                                                                                                                                                                             Created)
Last sequence update)
Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                           Score 487; DB 6; I
Pred. No. 4.6e-51;
2; Mismatches 7;
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Last annotation update)
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                                                                                                                                                                                                                                                                                                                                                                                                                                                03675B386E9D64D4 CRC64;
                                                                                                               Ruminantia; Pecora; Bovoidea;
                                                                                                                                                                                                                              185 AA.
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                                                                                                                                                                                                                                                                                                                                                                                                                       Length 185;
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RESULT 13
Q90W05
ID Q90W0
AC Q90W0
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Best Loc
Matches
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Best Loo
Matches
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Q90YYO;
Q90YYO;
Q1-DEC-2001 (TrEMBLrel. 19, Created)
Q1-DEC-2001 (TrEMBLrel. 19, Last sequence update
Q1-JUN-2002 (TrEMBLrel. 21, Last annotation update
Q1-JUN-2002 (Channel catfish).

Eukaryota; Metazoa; Chordata; Craniata; Vertebrate
Actinopterygii; Neopterygii; Teleostei; Ostariopi
Ictaluridae; Ictalurus.

NCBI_TaxID-7998;
[1]
SEQUENCE FROM N.A.

KOCabas A.M., Liu Z.J.;

"MOLECULAR Characterization and expression of the channel catfish (Ictalurus punctatus).";
SEQUENCE JAF396747; AAK84666.1;
-i - SIMILARITY: BELONGS TO THE TGF-BETA FAMILY.

EMBL; AF396747; AAK84666.1;
-interpro; IPR001839; TGFb.
Interpro; IPR001839; TGFb.
Interpro; IPR001111; TGFb_N.
Pfam; PF00688; TGFb_propeptide; 1.
ProDom; PD000357; TGFb; 1.
PROSITE; PS00250; TGF_BETA_1; UNKNOWN_1.

REPOSITE; PS00250; TGF_BETA_1; UNKNOWN_1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            HSSP; P12643; 3BMP.

*InterPro; IPR001839; TGFb_N.
InterPro; IPR001111; TGFb_N.
Pfam; PF00019; TGF-beta; 1.
Pfam; PF00688; TGFb_propeptide; 1
ProDom; PD000357; TGFb; 1.
SMART; SM00204; TGFB; 1.
PROSITE; PS00250; TGF_BETA_1; 1.
Glycoprotein.
NON_TER 185 185
SEQUENCE 185 AA; 20923 MW; BA
Q90W05
Q90W05;
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                                                            335
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                                                         ; 68
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                                                                                                                                        Similarity 73.
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imilarity 77.4%;
Conservative
          RELIMINARY;
                                                                                                                                                 74.68;
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8
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Pred.
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Pred.
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Mismatches
                                                                                                                                        ore 465; Dred. No. 4.76
Mismatches
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          385
                                                                                                                                         DB 13;
4.7e-48;
ches 7
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tion update)
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3.2e-50;
8;
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          AA
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; Siluriformes;
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                                                                                                                                                            389;
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QУ
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Best Loo
Matches
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Q9DDI8;
Q9DDI8;
01-MAR-2001 (TrEMBLrel. 16, C
01-OCT-2001 (TrEMBLrel. 18, I
01-JUN-2002 (TrEMBLrel. 21, I
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             InterPro;
InterPro;
Pfam; PFOO
Pfam; PFOO
ProDom; PI
PROSITE; I
Glycoprote
SEQUENCE
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Patarnell
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01-DEC-20
                                                                  Andersen
Submitted
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Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Actinopterygii; Neopterygii; Teleostei; Euteleostei;
Protacanthopterygii; Salmoniformes; Salmonidae; Salmo.
NCBI_TaxID=8030;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Sparus aurata: sequence, genomic structure, and expressi submitted (APR-2000) to the EMBL/GenBank/DDBJ databases. -!- SIMILARITY: BELONGS TO THE TGF-BETA FAMILY. EMBL; AF258448; AAK53545.1; -. EMBL; AF258447; AAK53544.1; -.
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)0688; TGFb_propeptide; 1.
)D000357; TGF_BETA_1; UNKNOWN_1.
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InterPro; IPR001839; TGFb_N.
InterPro; IPR001111; TGFb_N.
Pfam; PF00019; TGF-beta; 1.
Pfam; PF00688; TGFb_Propeptide; 1
ProDom; PD000357; TGFb; 1.
SMART; SM00204; TGFB; 1.
PROSITE; PS00250; TGF_BETA_1; 1.
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15-JUL-1999 (Rel. 38, Last sequence update)
15-JUN-2002 (Rel. 41, Last annotation update)
Growth/differentiation factor 8 precursor (GDF-GDF8 OR MSTN.
                                                                                                                                                                                                                                                                                                             EMBL;
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Gonzalez-Cadavid N.F., Taylor W.E., Yarasheski K., Ma K., Ezzat S., Shen R., Lalani R., Asa S., Mamita Arver S., Bhasin S.;
"Organization of the human myostatin gene and expressed and HIV-infected men with muscle wasting.";
Proc. Natl. Acad. Sci. U.S.A. 95:14938-14943(1998)
-!- FUNCTION: ACTS SPECIFICALLY AS A NEGATIVE REGULATION.
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InterPro; IPR001839; TGF
InterPro; IPR001111; TGF
Pfam; PF00019; TGF-beta;
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                                         DISULFID
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ProDom; PD000357; TGFb; 1.
SMART; SM00204; TGFB; 1.
PROSITE; PS00250; TGF_BETA_1; 1
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MEDLINE=98024153; PubMed=9356471;
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Mammalia; Eutheria; Primates;
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SIMILARITY: BELONGS
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AF104922; AAC96327.1;
P18075; 1BMP.
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                                                                                                                   Cytokine;
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                                                                                            _BETA_1; ...ne; Glycoprotein;
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POTENTIAL.

GROWTH/DIFFERENTIATION F
BY SIMILARITY.
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                                                                                               POTENTIAL.
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, Asa S., Mamita
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SMART; SM00204; TGFB;
PROSITE; PS00250; TGF_
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30-MAY-2000 ()
16-OCT-2001 ()
Growth/differe
GDF8 OR MSTN.
                                                                                                                                                                  SMAR.,
PROSITE; PS
                                                                                                                                                                                                                                                                                                                                                                                                           SEQUENCE FROM N.A.
SEQUENCE FROM N.A.
TISSUE=Skeletal muscle;
MEDLINE=98024153; PubMed=9356471;
MCPherron A.C., Lee S.-J.;
MCPherron A.C., Lee S.-J.;
"Double muscling in cattle due to mutations in the myostatin gene.";
Proc. Natl. Acad. Sci. U.S.A. 94:12457-12461(1997).
Proc. Natl. Acad. Sci. U.S.A. 94:12457-12461(1997).

PROC. NATL. ACTS SPECIFICALLY AS A NEGATIVE REGULATOR OF SKELETAL

THISSUE=Skeletal muscle;
MCPHOLINE 98024153; PubMed=9356471;

MCPherron A.C., Lee S.-J.;

"Double myostatin gene.";
Proc. Natl. Acad. Sci. U.S.A. 94:12457-12461(1997).
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042221;
30-MAY-2000
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DISULFID
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SEQUENCE
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CARBOHYD
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SIGNAL
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Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Archosauria; Aves; Neognathae; Galliformes; Meleagrididae; Meleag
                                                                                                                                                                                                                                                                                                                                                      use
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Pfam; PF00688;
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0 (Rel. 39, Last sequence update)
1 (Rel. 40, Last annotation update)
ferentiation factor 8 precursor (GDF-8) (Myostatin).
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IPR001111;
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larity 80.7%; Conservative
                                                                                                                                                                                                                                                                                    -profit institutions as long as its content is in no way this statement is not removed. Usage by and for commercial nail to license@isb-sib.ch).
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57; TGFb; 1.
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                                                                                                                                                                     0; TGF_BETA_
Cytokine; Gl
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80.7%;
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POTENTIAL.
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INTERCHAIN (BY SIMILARITY).
IN-LINKED (GLCNAC. . .) (POTI
N . D2AEAB732AEB4E77 CRC64;
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                          Score
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N-LINKED (GLCNAC. . .) (POTENTIAL).
EBFF6129725E6AFA CRC64;
Score 501; DB 1; Pred. No. 3.1e-48; Mismatches 11
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O18831;
15-JUL-1999 (Rel. 38, Cr
15-JUL-1999 (Rel. 38, La
16-OCT-2001 (Rel. 40, La
Growth/differentiation 1
GDF8 OR MSTN.
Sus scrofa (Pig).
Eukaryota; Metazoa; Chor
Mammalia; Eutheria; Ceta
NCBI_TaxID=9823;
EMBL; AF019623; AAB86690.1; -.
EMBL; AF188635; AAF02770.1; -.
EMBL; AF188636; AAF02771.1; -.
EMBL; AF188637; AAF02772.1; -.
EMBL; AF188638; AAF02773.1; -.
EMBL; AF033855; AAC08035.1; -.
EMBL; AF033855; AAC62489.1; -.
HSSP; P18075; 1BMP.
InterPro; IPR001839; TGFb.
InterPro; IPR001111; TGFb.N.
Pfam; PF00019; TGF-beta; 1.
Pfam; PF00688; TGFb_propeptide; 1
PROSITE; SM00204; TGFB; 1.
SMART; SM00204; TGFB; 1.
Growth factor; Cytokine; GlycoproSIGNAL 1 23
                                                                                                                                                                                                                                                                                                                                                  "Porcine myostatin cD
Yorkshire pigs.";
Submitted (SEP-1999) (3)
                                                                                                                                                                                                                                                                                                                                                                                      Proc. Natl. Acad. S
[2]
SEQUENCE FROM N.A.
STRAIN=Duroc, Hamps
TISSUE=Skeletal mus
Voelker G.R., Conro
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TISSUE=Skeletal muscle;
MEDLINE=98024153; PubMed=9356471;
McPherron A.C., Lee S.-J.;
"Double muscling in cattle due to Proc. Natl. Acad. Sci. U.S.A. 94:
                                                                                                                                                                             This SWISS-PROT entry is copyright. It is produced between the Swiss Institute of Bioinformatics and the European Bioinformatics Institute. There are ruse by non-profit institutions as long as its modified and this statement is not removed. Usage entities requires a license agreement (See http://vor send an email to license@isb-sib.ch).
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                                                                                                                                                                                                                                                                                                                            TISSUE=Muscle;
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ubmitted (SEP-1998) to the EMBL,
!- FUNCTION: ACTS SPECIFICALLY !
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                                                                                                                                                                                                                                                                SUBUNIT: HOMODIMER; SIMILARITY: BELONGS
                                                                                                                                                                                                                                                                                      FUNCTION: ACTS MUSCLE GROWTH.
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Cetartiodactyla; Suina;
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TO THE TGF-BETA
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Best Loc
Matches
MGD; MGI:95691; Gdf8.
InterPro; IPR001839; TGFb.
InterPro; IPR001111; TGFb_N.
Pfam; PF00019; TGF-beta; 1.
Pfam; PF00688; TGFb_propeptide; 1
ProDom; PD000357; TGFb; 1.
SMART; SM00204; TGFP.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DISULFID
DISULFID
DISULFID
CARBOHYD
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                          Mus musculus (Mouse
Eukaryota; Metazoa;
Mammalia; Eutheria;
NCBI_TaxID=10090;
[1]
SEQUENCE FROM N.A.
STRAIN=CD-1; TISSUE
MEDLINE=97284412; I
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   _MOUSE
GDF8_MOUSE
O08689;
01-NOV-1997
01-NOV-1997
16-OCT-2001
Growth/diffed
GDF8 OR MSTN
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CHAIN
DISULFID
                                                                                                                         modified
entities
or send a
                                                                                                                                                                                                                                                                                                                                "Regulation of skeletal muscle mass superfamily member.";
Nature 387:83-90(1997).
-!- FUNCTION: ACTS SPECIFICALLY AS
                                                                                                                                                                                                                                                                                                                                                             MEDLINE ... McPherron A.C., Lawier ... "Regulation of skeletal ...";
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use
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by non-
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SUBUNIT:
TISSUE SP
SKELETAL
DEVELOPME
ONE-THIRD
MYOTOME C
DETECTED
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           9
                                                                                                                                                                                                                                       SUNIT: HOMODIMER; DISULFIDE-LINKED (BY SIMILARITY).
SUE SPECIFICITY: EXPRESSED SPECIFICALLY IN DEVELOPING AND AD
ELETAL MUSCLE. WEAK EXPRESSION IN ADIPOSE TISSUE.
FILOPMENTAL STAGE: FIRST DETECTED AT DAY 9.5 POST-COITUM IN
FILOPMENT OF DEVELOPING SOMITES. AT DAY 10.5, EXPRESSED IN THE
FORMER COMPARTMENT OF SOMITES. AT LATER STAGES OF DEVELOPMENT,
FILOPMENT OF SOMITES. AT LATER STAGES OF DEVELOPMENT,
FILOPMENT OF SOMITES. AT LATER STAGES. EXPRESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Similarity Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           MSTN.
                                                                                                                                                                                                                                                                                                                                                                                                                                    Eutheria; Rodentia; ID=10090;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                997 (Rel. 35, Created)
997 (Rel. 35, Last sequence update)
001 (Rel. 40, Last annotation update)
ifferentiation factor 8 precursor (GDF-8) (Myostatin).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           HLVHQANPRGSAGPCCTPTKMSPINMLYFNGKEQIIYGKIPAMVVDRCGCS
                                                                                                                           and this statement is not removed. Usa requires a license agreement (See http: an email to license@isb-sib.ch).
                                                                                                                                                                                                 SS-PROT
                                                                                                                                                   non-profit and this st
                                                                                                                                                                                                                      INUES IN ADULTHOOD.
LARITY: BELONGS TO THE TGF-BETA FAMILY.
                                                                                                                                                                                     the
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                                                                                                                                                                                                                                                                                                                          GROWTH.
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267
281
309
313
339
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                                                                                                                                                                                                                                                                                                                                                                                                       TISSUE=Skeletal muscle;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (Mouse).
                                                                                                                                                             ROT entry is copyright. It is produced through a collaboration Swiss Institute of Bioinformatics and the EMBL outstation - Bioinformatics Institute. There are no restrictions on its profit institutions as long as its content is in no way
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                    Lawler A.M.,
                                                                                                                                                                                                                                                                                                                                                                       PubMed=9139826;
awler A.M., Lee S.-J.;
eletal muscle mass in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           EAGPCCTPTKMSPINMLYFNGKEQIIYGKIPAMVVDRCGCS
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375
340
372
374
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GROWTH/DIFFERENTIATION FACTOR 8
BY SIMILARITY.
BY SIMILARITY.
BY SIMILARITY.
INTERCHAIN (BY SIMILARITY).
INTERCHAIN (BY SIMILARITY).
N-LINKED (GLCNAC. . .) (POTENTI.
W; 0F658685EFDA3418 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Score 501; DB 1; 1 pred. No. 3.1e-48; L; Mismatches 11;
                                                                                                                                                                                                                                                                                                                                                                                                                                                     Craniata; Vertebrata; Sciurognathi; Muridae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PRT;
                                                                                                                                                                                                                                                                                                                                        A NEGATIVE
                                                                                                                                                                                                                                                                                                                                                                          in mice
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            376 AA
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                                                                                                                                                     Usage
                                                                                                                                                                                                                                                                                                                                         REGULATOR OF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ..) (POTENTIAL).
3 CRC64;
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/www.isb-sib.ch/announce
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; Murinae; Mus
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Best Local S
Matches 92
                                                                                                      InterPro; IPR001839; TGFb.
InterPro; IPR001111; TGFb_N.
InterPro; IPR001111; TGFb_N.
Pfam; PF00019; TGF-beta; 1.
Pfam; PF00688; TGFb_propeptide; 1
ProDom; PD000357; TGFb; 1.
SMART; SM00204; TGFB; 1.
PROSITE; PS00250; TGF_BETA_1; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GDF8_RAT
035312;
15-JUL-1999
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DISULFID
DISULFID
CARBOHYD
SEQUENCE
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SIGNAL
PROPEP
CHAIN
DISULFID
                                                   CHAIN
DISULFID
                                                                                  Growth
SIGNAL
                                                                                                                                                                                         EMBL;
                                                                                                                                                                                                                                                                                         McPherron A.C., Lee S.-J.;
"Double muscling in cattle due to mutations in the myostatin gene.
Proc. Natl. Acad. Sci. U.S.A. 94:12457-12461(1997).
-!- FUNCTION: ACTS SPECIFICALLY AS A NEGATIVE REGULATOR OF SKELETA
MUSCLE GROWTH.
-!- SUBUNIT: HOMODIMER; DISULFIDE-LINKED (BY SIMILARITY).
-!- SIMILARITY: BELONGS TO THE TGF-BETA FAMILY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      15-JUL-1999 (Rel. 38, 0
15-JUL-1999 (Rel. 38, 0
16-OCT-2001 (Rel. 40, 0
Growth/differentiation
                                                                                                                                                                                 HSSP;
                                                                                                                                                                                                        modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce, or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                   This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                GDF8
                               DISULFID
                                                                         PROPEF
                                                                                                                                                                                                                                                esu
                                                                                                                                                                                                                                                                                                                                                                          TISSUE=Skeletal muscle;
MEDLINE=98024153; PubMed=9356471;
                                                                                                                                                                                                                                                                                                                                                                                                           Rattus norvegicus (Rat).
Eukaryota; Metazoa; Chordata;
Mammalia; Eutheria; Rodentia;
NCBI_TaxID=10116;
[1]
                                         DISULFID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  323
                                                                                                                                                                                                                                                                                                                                                                                               EQUENCE FROM N.A.
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                                                                                                                                                                                                                                              European Bioinformatics Institute. The by non-profit institutions as long
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P18075; 1BMP.
                                                                                            factor;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            factor;
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Similarity 80.7%;
2; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                376
04; TGF_BETA_1; 1.
0250; TGF_BETA_1; 1.
1 24 POTENTIAL.
25 267 POTENTIAL.
268 376 GROWTH/DIFFERENTIATION FACTOR 8.
282 341 BY SIMILARITY.
310 373 BY SIMILARITY.
375 BY SIMILARITY.
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268
282
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314
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267
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Last annotation
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  annotation
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Pred. No. 3.1e-4
1; Mismatches
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BY SIMILARITY.
INTERCHAIN (BY SIMILARITY
N-LINKED (GLCNAC. . .) (PO
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POTENTIAL.

GROWTH/DIFFERENTIATION

BY SIMILARITY.
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Sciurognathi;
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thi; Muridae;
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11;
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CRC64;
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Query

Match

375

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2827

MW;

80.3%;

Score 500;

DB 1;

Length 375;

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RESULT
GDF8_SF
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Best Loc
Matches
DISULFID
DISULFID
DISULFID
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CARBOHYD
CARBOHYD
SEQUENCE
                                                                                                           PROSITE; Pactor;
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SEQUENCE FROM N.A.
TISSUE=Skeletal muscle;
MEDLINE=98024153; PubMed=9356471;
MEDLINE=98024153; PubMed=9356471;
MCPherron A.C., Lee S.-J.;
"Double muscling in cattle due to mutations in the myostatin gene.";
Proc. Natl. Acad. Sci. U.S.A. 94:12457-12461(1997).
Proc. Natl. Acad. Sci. U.S.A. 94:12457-12461(1997).

PROC. NATL. ACTS SPECIFICALLY AS A NEGATIVE REGULATOR OF SKELETAL

STRUCTION: ACTS SPECIFICALLY AS A NEGATIVE REGULARITY).
                                                                                                                                          ProDom; r.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GDF8 OR MST
Ovis aries
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                                                                                     CHAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                15-JUL-1999 (Rel. 38, Created)
15-JUL-1999 (Rel. 38, Last sequence update)
16-OCT-2001 (Rel. 40, Last annotation update)
Growth/differentiation factor 8 precursor (GD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SHEEP
                                                                                                                                                                  Pfam; PF00015;
Pfam; PF00688;
                                                                                                                                                                                                                                                       modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce, or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Eukaryota; Metazoa; Chor
Mammalia; Eutheria; Ceta
Bovidae; Caprinae; Ovis.
NCBI_TaxID=9940;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GDF8
                                                                                                 PROPEP
                                                                                                                                                                                               InterPro;
                                                                                                                                                                                                          InterPro;
                                                                                                                                                                                                                       EMBL; AF019622; AAB86689.1; HSSP; P18075; 1BMP.
                                                                                                                                                                                                                                                                                                use
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                                                                                                                                                                                                                                                                                             European Bioinformatics Institute. The by non-profit institutions as long
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          92;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         MSTN
                                                                                                                                                           PD000357;
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                                                                                                                                                                                                                                                                                                                       the
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                                                                                                                                                                                   IPR001839; TGFb. IPR001111; TGFb_019; TGF-beta; 1
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            24
267
281
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48
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                                                                                                                                                                                                                                                                                                                    Swiss Institute of Bio
                                                                                                                                                          TGFb_propeptide;
57; TGFb; 1.
                                                                                                                        Cytokine;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                STANDARD;
                                                                                                                                                TGFB;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 --EAGPCCTPTKMSPINMLYFNGKEQIIYGKIPAMVVDRCGCS
                                                                                                                                  TGF_BETA
                                     266
375
340
372
374
339
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Chordata; Craniata; Vertebrata; Euteleostomi; Cetartiodactyla; Ruminantia; Pecora; Bovoidea;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         42829 MW;
                                                                                                                                                                                               TGFb_N.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    80.4%; Score
80.7%; Pred.
                                                                                                                       Glycoprotein;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       INTERCHAIN (BY SIMILARITY).
N-LINKED (GLCNAC. . .) (POTENTIAL).
933043D8C8C3294B CRC64;
INTERCHAIN (BY SIMILARITY).
N-LINKED (GLCNAC. . .) (POTENTIAL).
N-LINKED (GLCNAC. . .) (POTENTIAL).
1C36F3833BB11241 CRC64;
                                              GROWTH/DIFFERENTIATION FACTOR BY SIMILARITY.
BY SIMILARITY.
BY SIMILARITY.
                                                                                                  POTENTIAL.
                                                                                                             POTENTIAL.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ed. No. 3.1e-48;
Mismatches 11;
                                                                                                                                                                                                                                                                                                                   ght. It is produced through a collaboration Bioinformatics and the EMBL outstation -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                375 AA
                                                                                                                        Signal.
                                                                                                                                                                                                                                                                                            There are no res
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  (GDF-8) (Myostatin).
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Matches
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SEQUENCE FROM N.A.
TISSUE=Skeletal muscle;
MEDLINE=98024153; PubMed
MEDLINE=98024153; Lee S.-J
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  EMBL; AF019619; AAB86686.1; -. HSSP; P18075; 1BMP.
InterPro; IPR001839; TGFb.
InterPro; IPR001111; TGFb_N.
Pfam; PF00019; TGF-beta; 1.
Pfam; PF00688; TGFb_propeptide; 1
ProDom; PD000357; TGFb; 1.
SMART; SM00204; TGFB; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 3_PAPHA
GDF8_PAPHA
GDF8_PAPHA
O18828;
15-JUL-1999 (Rel. 38, Cr
15-JUL-1999 (Rel. 38, La
16-OCT-2001 (Rel. 40, La
Growth/differentiation f
GDF8 OR MSTN.
                                                                                                                                                                                               DISULFID
DISULFID
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DISULFID
CARBOHYD
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                McPherron A.C., Lee S.-J.;

"Double muscling in cattle due to mutations in the myost

"Double muscling in cattle due to mutations in the myost

Proc. Natl. Acad. Sci. U.S.A. 94:12457-12461(1997).

-!- FUNCTION: ACTS SPECIFICALLY AS A NEGATIVE REGULATOR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Papio hamadryas (Hamadryas bai
Eukaryota; Metazoa; Chordata;
Mammalia; Eutheria; Primates;
Cercopithecinae; Papio.
NCBI_TaxID=9557;
                                                                                                                                                                                                                                                                                                                                               Growth
SIGNAL
PROPEP
CHAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               use by non-profit institutions as lomodified and this statement is not removentities requires a license agreement (or send an email to license@isb-sib.ch)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   This SWISS-PROT entry is copyright. It is produced between the Swiss Institute of Bioinformatics and the European Bioinformatics Institute. There are a use by non-profit institutions as long as its modified and this statement is not removed. Usage entities requires a license agreement (See http://www.commodified.com/licenses/
                                                                                                                                                                                                                                                                                                                                                                                                                                                    PROSITE;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 319
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SIMILARITY: BELONGS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PKVSASHL-----EAGPCCTPTKMSPINMLYFNGKEQIIYGKIPAMVVDRCGC
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ity 79.8%;
servative
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TO THE TGF-BETA I
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tor 8 precur
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                                                                                                                                                                                                GROWTH/DIFFERENTIATION FACTOR 8.
BY SIMILARITY.
BY SIMILARITY.
BY SIMILARITY.
INTERCHAIN (BY SIMILARITY).
INTERCHAIN (BY SIMILARITY).
N-LINKED (GLCNAC. . .) (POTENTIAL).
W; 7849B90ACAB926EA CRC64;
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                                                                                              Score 495; DB Pred. No. 1.4e-1; Mismatches
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Pred. No. 4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Craniata; Vertebrata; Eutele Catarrhini; Cercopithecidae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                precursor
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on update)
cursor (GDF-8
                                                                                                                                          495;
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                                                                                                                                                   Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           e by and for commercia/www.isb-sib.ch/announce
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STAND.....

CO18836; O18829; Q95N97;

DF 15-JUL-1998 (Rel. 36, Created)

DT 15-JUN-2002 (Rel. 41, Last sequence update)

DT 15-JUN-2002 (Rel. 41, Last annotation update)

DF 15-JUN-2002 (Rel. 41, Last annotation update)

GF 30N-2002 (Rel. 41, Last annotation update)

T-JUN-2002 (Rel. 41, Last annotation update)

DF 15-JUN-2002 (Rel. 41, Last annotation update)

DF 15-JUN-2002 (Rel. 41, Last annotation update)

T-JUN-2002 (Rel. 41, Last sequence update)

DF 15-JUN-2002 (Rel. 41, Last annotation update)

T-JUN-2002 (Rel. 41, Last annotation update)

DF 15-JUN-2002 (Rel. 41, Last annotation update)

T-JUN-2002 (Rel. 41
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               В
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STRAIN=HO
MEDLINE=9
MCPherron
"Double m
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STRAIN=Friesian; TISSUE=Muscle, and Embryo;
MEDLINE=97458167; PubMed=9314496;
Kambadur R., Sharma M., Smith T.P.L., Bass J.J.;
"Mutations in myostatin (GDF8) in double-muscled Belgian Blue Piedmontese cattle.";
Genome Poo 7.010 0.15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              "Genomic gene.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          MEDLINE=2
Jeanplong
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Proc. Na
[3]
SEQUENCI
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EMBL; AF01
EMBL; AF01
EMBL; AF32
HSSP; P180
InterPro;
                                                                                                                              entities or send a
                                                                                                                                                                         use by modified
                                                                                                                                                                                                                This SWISS-PROT entry between the Swiss Ins
                                                                                                                                                                                                                                                                                              HINDLIMB MUSCLES:

-!- DEVELOPMENTAL STAGE: WIDELY EXPRESSED THROUGHOUT DEVELOPMENT.

LOW LEVELS ARE FOUND UP TO DAY 29 EMBRYOS. LEVELS INCREASE FROM DAY 31 UP UNTIL LATE GESTATION.

-!- DISEASE: DEFECTS IN GDF8 ARE THE CAUSE OF THE DOUBLE-MUSCLE PHENOTYPE OR MUSCULAR HYPERTROPHY (MH), AN AUTOSOMAL RECESSIVE DISEASE FREQUENTLY FOUND IN THE BELGIAN BLUE AND PIEDMONTESE CATTLE BREEDS. THIS DISEASE IS CHARACTERIZED BY AN INCREASED NUMBER OF MUSCLE FIBERS (HYPERPLASIA), RESULTING IN AN INCREASE IS SIMILARITY: BELONGS TO THE TGF-BETA FAMILY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               322
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    FUNC
MUSCI
SUBUI
                                                                                                                                                                    European Bioinformatics Institute. The by non-profit institutions as long ified and this statement is not removed
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SUBUNIT: HOMODIMER; DISULFIDE-LINKED (BY SIMILARITY).
TISSUE SPECIFICITY: SPECIFICALLY EXPRESSED IN DEVELOPING AND SKELETAL MUSCLE. HIGHEST LEVELS FOUND IN THE HINDLIMB MUSCLES M. SEMIMEMBRANOSUS AND M. BICEPS FEMORIS; LOW LEVELS IN OTHER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Na
                                                               AF019761; AAB81508.1; AF019620; AAB86687.1;
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                   F019620; AAB
F320998; AAG
18075; 1BMP.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1. Biochem. 220:31-37(20 TION: ACTS SPECIFICALLY LE GROWTH.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               n A.C., Lee S.-J.; muscling in cattle due to mutations in the myostatin tl. Acad. Sci. U.S.A. 94:12457-12461(1997).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           FROM N.A., AND VARIANTS MH LEU-94 olstein; TISSUE=Skeletal muscle; 98024153; PubMed=9356471;
                                                                                                                       an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       FROM N.A.
21343337; PubMed=11451380;
g F., Sharma M., Somers W.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  F., Sharma M., Somers W.G., organization and neonatal exp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     7:910-916(1997).
                                                                                                                                                                                                                                         NOT entry is copyright. It is produced swiss Institute of Bioinformatics
                                        AAB86687.1;
AAG48116.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        220:31-37(2001).
                                                                                                                                                    is not removed. Usage by and for commercial agreement (See http://www.isb-sib.ch/announce,
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                                                                                                                                                                                                                                           It is produced through a collaboration informatics and the EMBL outstation -
                                                                                                                                                                          There are no rest
ng as its content
ved. Usage by a
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Kambadur R.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Euteleostomi;
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IPR001839;

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RESULT 10
GDF8_BRARE
ID GDF8_AC 04222
DT 30-MP
CC GROWT
GDF8
OX Brach
OX NCBI_
RN [1]
RP SEQUIF
RC TISSUE
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CCC
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Pfam; PF00019; TGF-beta;
Pfam; PF00688; TGFb_prope;
ProDom; PD000357; TGFb; 1
SMART; SM00204; TGFB; 1.
PROSITE; PS00250; TGF_BETA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PROSITE; PS0025
Growth factor;
SIGNAL
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DISULFID
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VARIANT
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04222;
30-MAY-2000 (Rel. 39, Created)
30-MAY-2000 (Rel. 39, Last sequence update)
15-JUN-2002 (Rel. 41, Last annotation update)
Growth/differentiation factor 8 precursor (GDF-8) (Myostatin).
GDF8 OR MSTN.
Brachydanio rerio (Zebrafish) (Danio rerio).
Brachydanio rerio (Zebrafish) (Danio rerio).
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CONFLICT
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SEQUENCE FROM N.A.
TISSUE=Skeletal muscle;
MEDLINE=98024153; PubMed=9356471;
MEDHINE=98024153; PubMed=9356471;
MCPherron A.C., Lèe S.-J.;
"Double muscling in cattle due to mutations in the myostatin gene.
Proc. Natl. Acad. Sci. U.S.A. 94:12457-12461(1997).
-!- FUNCTION: ACTS SPECIFICALLY AS A NEGATIVE REGULATOR OF SKELETA
                                                                                               HSSP;
                                                                ZFIN;
                                                                                                                                                                                                                  This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation - the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Actinopterygii; Neopterygii; Cyprinidae; Danio. NCBI_TaxID=7955;
                                                                                                                                                                                            entities requires a license agreement (or send an email to license@isb-sib.ch)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       BRARE
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                                                                                                                               EMBL;
                                   InterPro;
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                                                                                                                                                                                                                                                                                                                                                                                                                                             SUBUNIT: HOMODIMER; SIMILARITY: BELONGS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           MUSCLE GROWTH.
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P18075; 1B
ZDB-GENE-990415-165; gdf8
Pro; IPR001839; TGFb.
Pro; IPR001111; TGFb_N.
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                                                                                                1BMP.
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57; TGFb; 1.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AA;
                                                                                                                           AAB86693.1;
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78.9%;
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TO THE TGF-BETA FAMILY.
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POTENTIAL.
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BY SIMILARITY.
BY SIMILARITY.
BY SIMILARITY.
BY SIMILARITY.
INTERCHAIN (BY SIMILARITY).
INTERCHAIN (GLCNAC. . .) (POTENTIAL).
N-LINKED (GLCNAC. . .) (POTENTIAL).
F -> L (IN MH; PIEDMONTESE BREED).
C -> Y (IN MH; PIEDMONTESE BREED).
M -> T (IN REF. 1).
M -> T (IN REF. 1).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ) (Danio rerio).
; Craniata; Vertebrata; Euteleostomi;
Teleostei; Ostariophysi; Cypriniformes;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            \overset{\sim}{\sim}
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. No. 5.1e-47;
ismatches 12;
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5F6 CRC64;
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GDFB_MC
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PROSITE; PS
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SEQUENCE
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SMART; SMOC
PROSITE; PS
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SIGNAL
PROPEP
                                                                                                                                                                                                                                                            Nat. Gene
[3]
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gamer L.W., Wollman ....
Rosen V.;
Rosen V.;
"A novel BMP expressed in developing mouse
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GDFB_MOUSE STANDARD; PRT; 405 AA. Q9Z1W4; Q9QX55; Q9R221; 16-OCT-2001 (Rel. 40, Created) 16-OCT-2001 (Rel. 40, Last sequence update) 16-OCT-2001 (Rel. 40, Last annotation update) 16-OCT-2001 (Rel. 40, Last annotation update) Growth/differentiation factor 11 precursor (Bull).
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Pfam;
Pfam;
                                                                                                                                                                                                                                                                                                                          SEQUENCE FROM N.A.
STRAIN=129/SvJ;
MEDLINE=99318097; PubMed=10391213;
McPherron A.C., Lawler A.M., Lee S.-J.;
"Regulation of anterior/posterior patterning of growth/differentiation factor 11.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                              Dev.
[2]
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SEQUENCE FROM N.A.
SEQUENCE FROM N.A.
MEDLINE=99177155; PubMed=10075854;
MOLINE WOLFMAN N.M., Celeste
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Eukaryota; Metazo
Mammalia; Eutheri
NCBI_TaxID=10090;
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                                                                                                                                                                    "Expression BMP/TGFbeta
                                                                                                                                                                                                                                          MEDLINE=99173787;
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                                                                                                                                                 Mech.
                                                                                                                                                                                                                  Nakashima
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FUNCTION: SECRETED SIGNAL THAT ACTS GLOBALLY TO SPECIFY POSITIFUNCTION: SECRETED SIGNAL THAT ACTS GLOBALLY TO SPECIFY POSITIFUNCTION: SECRETED SIGNAL THAT ACTS GLOBALLY TO SPECIFY POSITIFUNCTION: SUBJURITY ALONG THE ANTERNIOR/POSTERIOR AXIS DURING DEVELOPMENT. PLAY CRITICAL ROLES IN PATTERNING BOTH MESODERMAL AND NEURAL TISSUES AND IN ESTABLISHING THE SKELETAL PATTERN.
SUBUNIT: HOMODIMER; DISULFIDE-LINKED (BY SIMILARITY).
SUBCELLULAR LOCATION: Secreted (Probable).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                QKYPH
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      75.1%;
Similarity 72.6%;
85; Conservative
                                                                                                                                                                                                                                                              OF,
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0688; TGFb_propeptide;

0000357; TGFb; 1.

100204; TGFB; 1.

PS00250; TGF_BETA_1; 1.
                                                                                                                                                                                           M., Toyono T., Akamine A., Joyner A.; on of growth/differentiation factor 11,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  MP11.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Metazoa; Chordata;
Eutheria; Rodentia;
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374 AA;
                                                                                                                                      superfamily during mouse embryogenesis."; 80:185-189(1999).
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (Mouse).
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                                                                                                                                                                                                                                        PubMed=10072786;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         -EAGPCCTPTKMSPINMLYFNGKEQIIYGKIPAMVVDRCGCS 109
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Glycoprotein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Score 468; DB 1;
Pred. No. 1.4e-44;
8; Mismatches 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         POTENTIAL.
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N-LINKED (GLCNAC. . .) (POTENTIAL).
N-LINKED (GLCNAC. . .) (POTENTIAL).
6302BC6C86562576 CRC64;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Craniata; Ver
Sciurognathi;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SIMILARITY
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Vertebrata; Euteleostomi;
chi; Muridae; Murinae; Mus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               limb, spinal cord,
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Matches
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EMBL; AF100904; AAC72853.1; JOINI
EMBL; AF100905; AAC72853.1; JOINI
EMBL; AF028337; AAF21633.1; -..
EMBL; AF028335; AAF21633.1; -..
EMBL; AF028336; AAF21633.1; JOINI
EMBL; AF0028336; AAF21633.1; JOINI
EMBL; AF028336; AAF21633.1; JOINI
EMBL; AF0028337; Gdf11.
InterPro; IPR001839; TGFb.
InterPro; IPR001839; TGFb.
Pfam; PF00688; TGFF_beta; 1.
Pfam; PF00688; TGFF_beta; 1.
PF0Dom; PD000357; TGFB; 1.
SMART; SM00204; TGFB; 1.
PROSITE; PS00250; TGF_BETA_1; 1.
SGRONTH factor; Cytokine; Glycoprosical Section of the company 
B_HUMAN
GDFB_HUMAN
GDFB_HUMAN
GDFB_HUMAN
G95390; Q9UID1; Q9UID2;
16-OCT-2001 (Rel. 40, Cr
16-OCT-2002 (Rel. 41, La
15-JUN-2002 (Rel. 41, La
Growth/differentiation f
11).
                                                                                                                                                                                                                                                                                                                                                                                                                                         DOMAIN
DOMAIN
DISULFID
DISULFID
DISULFID
CARBOHYD
CONFLICT
CONFLICT
SEQUENCE
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                                                                                                                                                                                                                                                                                     297
                                                                                                                                                                                                              349
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                                                                                                                                                                                                                                                                                                                                                                                   Local
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DENTAL PULP AND BRAIN.

DEVELOPMENTAL STAGE: FIRST STRONGLY EXPRESSED IN RESTRICTED DOMAINS AT 8.5 DAYS POST COITUS (DPC) WHERE IT IS HIGHEST IN THE TAIL BUD. AT 10.5 DPC, EXPRESSED IN THE BRANCHIAL ARCHES, LIMB BUD, TAIL BUD AND POSTERIOR DORSAL NEURAL TUBE. LATER, EXPRESSED IN TERMINALLY-DIFFERENTIATED ODONTOBLASTS, THE NASAL EPITHELIUM, RETINA AND SPECIFIC REGIONS OF THE BRAIN.

SIMILARITY: BELONGS TO THE TGF-BETA FAMILY.
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                                                                                                                                                                                                                                                                                   KVSASHL-
                                                                                                                                                                                                                                                                                                                                                                   84;
                                                                                                                                                                                                                                                                                                                                                              75.0%;
Similarity 71.8%;
34; Conservative
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92
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14946
                                     40, Created)
40, Last sequence up
41, Last annotation
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                        factor
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Glycoprotein;
POTENTIAL.
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BY SIMILARITY.
BY SIMILARITY.
BY SIMILARITY.
BY SIMILARITY.
INTERCHAIN (BY SIMI)
N-LINKED (GLCNAC...
E -> G (IN REF. 3).
T -> N (IN REF. 2).
A74E382710A14781 (
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                                                                                                                                                                                                                                                                                                                                                                  Score 467; DB 1
Pred. No. 2e-44;
}; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   BY SIMILARITY.

GROWTH/DIFFERENTIATION FACTOR
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                    ation update)
precursor (E
                                                        update)
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                     (Bone
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NC. . .) (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                     9;
                                                                                                                                                                                                                                                                                                                                                                                                                                               CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                       Length
                      morphogenetic
                                                                                                                                                                                                                                                                                                                                                                     Indels
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R LOCALIZING
SSED IN ADULT
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                        protein
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Gamer L.W., Wolfman N.M., Celeste *
Rosen V.;
"A novel BMP are bud in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   EMBL; AF100907; AAC72852.1; -.
EMBL; AF028333; AAF21630.1; -.
EMBL; AF028334; AAF21631.1; -.
HSSP; P18075; 1BMP.
Genew; HGNC:4216; GDF11.
MIM; 603936; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                McPherron A.
"Regulation
growth/diffe
Nat. Genet.
-!- FUNCTION
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   bud is a
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Mammalia; E
NCBI_TaxID=
                                                                                                                                                                                                                                                        ProDom; F
SMART; SM
PROSITE;
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                                                                                                                                                                                                        DISULFID CARBOHYD SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           This SWISS-PROT entry between the Swiss Ins
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       InterPro; IPR001839; TGFb.
InterPro; IPR001111; TGFb_N.
Pfam; PF00019; TGF-beta; 1.
Pfam; PF00688; TGFb_propeptide;
ProDom; PD000357; TGFb; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               MEDLINE-
                                                         299
                                                                                                                                                   Local
                                                                                                                                                                    Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Genet. 22:260-264(1999).
FUNCTION: SECRETED SIGNAL THAT ACTS GLOBALLY TO SPECIFY POSITIONAL IDENTITY ALONG THE ANTERIOR/POSTERIOR AXIS DURING DEVELOPMENT.
PLAY CRITICAL ROLES IN PATTERNING BOTH MESODERMAL AND NEURAL TISSUES AND IN ESTABLISHING THE SKELETAL PATTERN.
SUBUNIT: HOMODIMER; DISULFIDE-LINKED (BY SIMILARITY).
SUBCELLULAR LOCATION: Secreted (Probable).
SIMILARITY: BELONGS TO THE TGF-BETA FAMILY.
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                                                      0R
                  PKVSASHL-
                                                                                                                                 84;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          non-profit institutions as long as it; and this statement is not removed. Usa; requires a license agreement (See http://an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                     PS00250;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ion of anterior/posterior
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               99318097;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           lens (Human).
; Metazoa; Chordata;
Eutheria; Primates;
[D=9606;
                                                                                                                                                   Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     BMP expressed in developing mouse limb, spinal cord, potent mesoderm inducer in Xenopus embryos."; 208:222-232(1999).
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                                                                                                                                   Conservative
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Swiss Institute of Bioinf
Bioinformatics Institute.
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                                                                                                                                                                                                                                                                                                                                                                                                                     Cytokine;
                                                                                                                                                                                                                                                                                                                                                                                                                                                           TGFB;
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awler A.M., Lee S.-J.;
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298
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                                                                                                                                                  75.0%;
71.8%;
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EAGPCCTPTKMSPINMLYFNGKEQIIYGKIPAMVVDRCGCS
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BY SIMILARITY.
INTERCHAIN (BY SIMILARITY).
N-LINKED (GLCNAC. . .) (POTI
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                                                                                                                                                   Score 467; DB 1
Pred. No. 2e-44;
                                                                                                                                                                                                                                                                                                                                                             BY SIMILARITY.
GROWTH/DIFFERENTIATION FACTOR 11.
                                                                                                                                                                                                                                                                                                                          POLY-GLY
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         yht. It is produced through a collaboration Bioinformatics and the EMBL outstation - Litute. There are no restrictions on its is as long as its content is in no way
                                                                                                                                                                                                                                                                                   SIMILARITY. SIMILARITY.
                                                                                                                                    Mismatches
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i; Hominidae; Homo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Hattersley G.,
                                                                                                                                                                        DB 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               of the axial skeleton
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Usage
                                                                                                                                    9;
                                                                                                                                                                        Length 407;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ye by and for commercia
'/www.isb'-sib.ch/announce,
                                                                                                                                     Indels
                                                                                                                                                                                                                               (POTENTIAL)
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                                                                                                                                     16;
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                                                               -MFM 350
                          109
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SEQUENCE FROM N.A.

CTISSUE=Dental pulp;

X MEDLINE=99173787; PubMed=10072786;

X MEDLINE=99173787; PubMed=10, Axis down member of the m
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Matches 77
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16-OCT-2001 (Rel. 40, Created)
16-OCT-2001 (Rel. 40, Last sequence update)
16-OCT-2001 (Rel. 40, Last annotation update)
Growth/differentiation factor 11 precursor (Bondard) (Fragment).
GDF11 OR BMP11.
Rattus norvegicus (Rat).
                                                                                                                                                                                                                                                                                                                                                                               InterPro; IPR001839; TGFb.
InterPro; IPR0011111; TGFb_N.
Pfam; PF00019; TGF-beta; 1.
Pfam; PF00688; TGFb_propeptide; 1
ProDom; PD000357; TGFb; 1.
SMART; SM00204; TGFB; 1.
PROSITE; PS00250; TGF_BETA_1; 1.
                                                                                                                                                                                                                                           DISULFID DISULFID CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation - the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                              CHAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Rattus norvegicus (Rat).
Eukaryota; Metazoa; Chordata;
Mammalia; Eutheria; Rodentia;
NCBI_TaxID=10116;
                                                                                                                                                                                                                                                                                                                                   PROPEP
                                                                                                                                                                                                                                                                                                                                                                 Growth
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QKYPHTHLVQQANPRGSAGPCCTPTKMSPINMLYFNDKQQIIYGKIPGMVVDRCGCS
                                                                   factor;
                                                                                                                                       67.4%;
Similarity 69.4%;
77; Conservative
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243
154
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AA;
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GROWTH/DIFFERENTIATION FACTOR 1.
POLY-GLY.
BY SIMILARITY.
INTERCHAIN (BY SIMILARITY).
N-LINKED (GLCNAC. . .) (POTENTI.
                                                                                                                                         8;
                                                                                                                                                       Score 420; DB 1;
Pred. No. 2.7e-39
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Sciurognathi;
                                                                                                                                                                                                            81D5B93FED6B0443 CRC64;
                                                                                                                                        Mismatches
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[N (BY SIMILARITY).
(GLCNAC. . .) (POTENTIAL)
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                                                                                                                                                                       Length 345
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                                   103
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                                                                                   HSSP; III

MGD; MGI: 96571;

InterPro; IPR001839; TGFb_N.

InterPro; IPR001111; TGFb_N.

Pfam; PF00019; TGF-beta; 1.

Pfam: PF00688; TGFb_propeptide; 1.
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Q04999; Q61277;
01-FEB-1994 (Rel. 28, C
01-NOV-1997 (Rel. 35, I
16-OCT-2001 (Rel. 40, I
                                                            ProDom; Processing SMART; SM00204; TG: SM00250; '
                                                                                                                                                                                                                    PIR; S31441; S31
HSSP; P12643; 3B
MGD; MGI: 96571;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Albano P.M., G
"Activins are
and EC cells a
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Mech. Dev.
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Growth f
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CHAIN
                                                                                                                                                                                                                                                                          EMBL;
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STRAIN=CBA X NMR1; TISSUE=Testis;

MEDLINE=95344997; PubMed=7619733;

Ritvos O., Tuuri T., Eramaa M., Si
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Eukaryota; Metazo
Mammalia; Eutheri
NCBI_TaxID=10090;
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                                                                                                                                                                                                                                                                                                                                  modified and this statement is not removed. entities requires a license agreement (See or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                   use
                                                                                                                                                                                                                                                                                                                                                                                                                This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Development 1 -!- FUNCTION:
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ACTIVINS.
SUBUNIT: 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          INHIBIN A IS A DIMER OF ALPHA AND BETA-A.
INHIBIN B IS A DIMER OF ALPHA AND BETA-B.
ACTIVIN A IS A HOMODIMER OF BETA-A.
ACTIVIN B IS A HOMODIMER OF BETA-B.
ACTIVIN AB IS A DIMER OF BETA-A AND BETA-B.
TISSUE SPECIFICITY: UTERUS, TESTIS, OVARY, LUNG,
CJ7 EMBRYONIC STEM CELLS, AND POSSIBLY IN LIVER.
SIMILARITY: BELONGS TO THE TGF-BETA FAMILY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ivins are expressed in preimplantation mouse embryos and in ES EC cells and are regulated on their differentiation."; slopment 117:711-723(1993). FUNCTION: INHIBINS AND ACTIVINS INHIBIT AND ACTIVATE, RESPECTIVELY, THE SECRETION OF FOLLITROPIN BY THE PITUITARY GLAND. INHIBINS/ACTIVINS ARE INVOLVED IN REGULATING A NUMBER OF DIVERSE FUNCTIONS SUCH AS HYPOTHALAMIC AND PITUITARY HORMONE SECRETION, GONADAL HORMONE SECRETION, GERM CELL DEVELOPMENT AND MATURATION, ERYTHROID DIFFERENTIATION, INSULIN SECRETION, NERVE CELL SURVIVAL, EMBRYONIC AXIAL DEVELOPMENT OR BONE GROWTH, DEPENDING ON THEIR
                                                                                                                                                                                                                                     x69620;
S31441; S
P12643;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        disrupts epithelial branching morphogenesis in developing organs of the mouse.";
. 50:229-245(1995).
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Eutheria; Rodentia;
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; 3BMP.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (Rel. 35, Last sequence update)
(Rel. 40, Last annotation update)
B chain precursor (Activin beta-B chain) (Fragment).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (Mouse).
                                                         Hormone; Glycoprotein.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      STANDARD;
                                                                              GFB; 1.
TGF_BETA_1; 1.
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    \begin{array}{c} 140 \\ 255 \end{array}
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                       POTENTIAL.
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Sciurognathi;
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                                                                                                                                                                                                                                                                                                                                                                                                There are no restrictions g as its content is in
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; Murinae; Mus.
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MEDLINE-91029482; PubMed=2225063;

A Mitrani E., Ziv T., Thomsen G., Shimoni Y., Melton D.A., Bril A.;

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A Mitrani E., Ziv T., Thomsen G., Shimoni Y., Melton D.A., Bril A.;

A Mitrani E., Ziv T., Melton D.A., Bril A., Bril A., Bril A.,

A Mitrani E., Ziv T., Melton D.A., Bril A., Bril A.,

A Mitrani E., Ziv T., Melton D.A., B
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Best Loo
Matches
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NCBI_TaxID=9031;
[1]
SEQUENCE FROM N.A.
TISSUE=Follicle;
Klinger H., Halaschek-Wiener J
Submitted (JUL-1996) to the EM
[2]
SEQUENCE FROM N.A.
STRAIN=White leghorn; TISSUE=O
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     IHBB_CHICK STANDARD P27093; 073796; 01-AUG-1992 (Rel. 23, COLON-1997 (Rel. 35, INFINITION DETAILS BECHAIN PRINTED BY THE BELL OF THE BELL 
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Submitted (MAR-1998)
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       Local
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                 ACTIVINS.
SUBUNIT: DIMERIC,
INHIBIN A IS A DII
INHIBIN B IS A DII
ACTIVIN A IS A HOI
ACTIVIN B IS A HOI
ACTIVIN AB IS A DII
SIMILARITY: BELON
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auria; Aves; Neognathae;
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to the EMBL/GenBank/DDBJ databas
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Galliformes; Phasianidae; Phasianinae;
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Search completed: March 25, 2003, 15:11:38
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RESULT 2 I48235 inhibin beta-B chain - mouse (fragment) N;Alternate names: activin bB chain C;Species: Mus musculus (house mouse) C;Date: 02-Jul-1996 #sequence_revision 01-Aug-1997 #text_change 16- C;Accession: I48235; I48266; S31441 R;Ritvos, O.; Tuuri, T.; Eramaa, M.; Sainio, K.; Hilden, K.; Saxen, Mech. Dev. 50, 229-245, 1995 A;Title: Activin disrupts epithelial branching morphogenesis in dev A;Reference number: I48235; MUID:95344997; pMID:7619733 A;Accession: I48235 A;Status: preliminary; translated from GB/EMBL/DDBJ A;Molecule type: mRNA A;Residues: 1-234 <res> A;Cross-references: EMBL:X83376; NID:g603571; PIDN:CAA58290.1; PID:R;Albano, R.M.; Groome, N.; Smith, J.C. Development 117, 711-723, 1993</res>	RESULT 1 151199 activin beta B subunit - African clawed frog C; Species: Xenopus laevis (African clawed frog) C; Species: Xenopus laevis (African clawed frog) C; Species: Xenopus laevis (African clawed frog) C; Date: 13-Sep-1996 #sequence_revision 13-Sep-1996 #text_change 16-Jul C; Accession: 151199 R; Dohrmann, C.E.; Hemmati-Brivanlou, A.; Thomsen, G.H.; Fields, A.; Woo Dev. Biol: 157, 474-483, 1993 A; Title: Expression of activin mRNA during early development in Xenopus A; Reference number: 151199; MUID:93273083; PMID:8500654 A; Recession: 151199 A; Status: preliminary; translated from GB/EMBL/DDBJ A; Accession: 151199 A; Status: preliminary; translated from GB/EMBL/DDBJ A; Molecule type: mRNA A; Residues: 1-370 < DOH> A; Cross-references: GB:S61773; NID:g386027; PIDN:AAB26863.1; PID:g3860 C; Superfamily: inhibin Query Match Best Local Similarity 37.4%; Pred. No. 2.7e-17; Matches 46; Conservative 17; Mismatches 36; Indels 24; G Qy 3 GLDCDEHSTESRCCRYPLTVDFEAFGW-DWIIAPKRYKANYCSGECEFNNFTVSFWLRVP A; Cross-references: GB:S61773; NID:g3860 C; Superfamily: inhibin Query Match Best Local Similarity 37.4%; Pred. No. 2.7e-17; Matches 46; Conservative 17; Mismatches 36; Indels 24; G Qy 3 GLDCDEHSTESRCCRYPLTVDFEAFGW-DWIIAPKRYKANYCSGECEFNNFTVSFWLRVP Qy 3 GLDCDEHSTESRCCRYPLTVDFEAFGW-DWIIAPKRYKANYCSGECEFNNFTVSFWLRVP Qy 6 KYSASHLEA	30 203 32.6 396 1 BMHU2 31 202 32.4 353 2 I50607 32 202 32.4 398 2 JH0688 33 202 32.4 398 2 JH0687 34 201.5 32.3 413 2 JC4862 35 197.5 31.7 454 1 BMHU5 37 197.5 31.7 454 1 BMHU5 38 197 31.6 366 2 A46607 39 195.5 31.4 313 2 I51284 40 195.5 31.4 360 2 A29619 41 195 31.3 360 2 I53032 42 194.5 31.2 426 2 JH0690 45 194.5 31.2 426 2 JH0690 ALIGNMENTS bone morph transformi osteogenic bone morph bo
16-Jul-1999 xen, L.; Gilbert, S.F. developing glandular PID:g603572	ge 16-Jul-1999 s, A.; Woolf, T.M.; Melt in Xenopus laevis. PID:g386028 PID:g386028 PID:g386028 TVSFWLRVP 61 ::	bone morphogenetic bone morphogenetic bone morphogenetic bone morphogenetic activin beta-A cha bone morphogenetic spnvR1 protein - s growth/differentia bone morphogenetic vg1 embryonic grow bone morphogenetic transforming growt osteogenic protein bone morphogenetic bone morphogenetic bone morphogenetic

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A; Residues: 1-174 <FEN-
A; Cross-references: GB:M32756; GB:M32757; NILL-3-
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Mol. Endocrinol. 3, 1914-1925, 1989

A; Title: Analysis of the 5'-flanking regions of rat inhibin A; Reference number: A41398; MUID:90190649; PMID:2628729

A; Accession: B41398
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N; Alternate names: inhibin/activin beta B-chain
C; Species: Rattus norvegicus (Norway rat)
C; Date: 03-Apr-1992 #sequence_revision 01-Aug-1997
C; Accession: B41398; I53288; C40905
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A;Molecule type: www.
A;Molecule ty
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A; Residues: 1-7 < RES>
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Status: preliminary; translated from GB/EMBL/DDBJ:Molecule type: DNA
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Residues: 134,'D',136-255 <ALB>
Cross-references: EMBL:X69620;
Superfamily: inhibin
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Local Similarity 39.0%;
es 48; Conservative
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                                             type: MKNA
3: 133-411 <ESC>
nily: inhibin
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Pred. No. 5e-17;
16; Mismatches
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Pred. No. 3.1e-17;
5; Mismatches 35;
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A; Title:
A; Referer
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C; Species: H
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F;235-349/Produ
F;35/Binding si
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C;Species: Sus
C;Date: 30-Jun-
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A40150
                                                                                            R; Feng,
                                                                                                                                                A; Residues: 55-
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A; Accession: A4
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WFPGBB
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C; Accession: A4
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C;Comment: The source of this protein is ovarian follicular fluid.
C;Comment: The mature protein is the carboxyl-terminal segment of a precursor polypep ifferent forms of inhibin have been isolated (A and B) that differ in the amino-termi C;Comment: Inhibin is secreted by ovaries or testes and inhibits the secretion of fol C;Superfamily: inhibin
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                C; Keywords: contraceptive;
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Nature 318, 659-663,
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                                                                                         references: GB:M13437; NID:g186416; PIDN:AAA59169.1; Z.M.; Bardin, C.W.; Chen, C.L.C.
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2.M.; Bardin, C.W.; Chen, C.L.C.
ocrinol. 3, 939-948, 1989
Characterization and regulation of testicular
nce number: A40156; MUID:89295443; PMID:2739657
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us scrofa domestica (domestic pig)
un-1987 #sequence_revision 30-Jun-1987 #text_change 01-Dec-2000
A01394
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P: DNA
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-1999 #sequence_revision 10-sep-1999 #text_change
10150; C24248; A40156; S10751
Berkemeier, L.M.; Schmelzer, C.H.; Schwall, R.H.
L. 3, 1352-1358, 1989
In B: precursor sequences, genomic structure and inber: A40150; MUID:90114200; PMID:2575216
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pt: inhibin beta-B chain #status predicted <MAT>
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35.8%; Pred. No. 5.1e-16;
Live 18; Mismatches 37;
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A; Gene: GDB: INHBB
A; Cross-references: GDB:
A; Map position: 2cen-2q1
C; Superfamily: inhibin
C; Keywords: glycoproteir
F; 1-20/Domain: signal se
F; 21-292/Domain: propept
F; 293/Product: inhibin l
F; 93/Binding site: carbo
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A; Residues: 293-294, 'GX', 297-302, 'XX', 305-307
C; Comment: Activins A and B are homodimers of bin beta-A and beta-B, respectively.
C; Genetics:
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S50899
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A; Molecule t
A; Residues:
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C; Species: Bos primigenius taurus (cattle)
C; Date: 01-Aug-1995 #sequence_revision 01-Sep-1995
C; Accession: S50899
C; Accession: S50899
R; Thompson, D.A.; Cronin, C.N.; Martin, F.
Eur. J. Biochem. 226, 751-764, 1994
Eur. J. Biochem. 226, 751-764, 1994
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Cross-references: GB:M31632
Experimental source: testis
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   alpha-,
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activin beta B
C; Species: Bra
C; Date: 13-Sep
C; Accession: I
R; Wittbrodt, J
Genes Dev. 8,
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N;Alternate names: gact 11
C;Species: Carassius auratus (goldfish)
C;Date: 31-Dec-1993 #sequence_revision 31-Dec-1993 #text_cha
C;Accession: PN0506
R;Ge, W.; Gallin, W.J.; Strobeck, C.; Peter, R.E.
Biochem. Biophys. Res. Commun. 193, 711-717, 1993
A;Title: Cloning and sequencing of goldfish activin subunit
A;Reference number: PN0506
A;Accession: PN0506
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        RESULT
PN0506
                                                                                                                                                                                                                                        Genes Dev. 8, 1448-1462, 1994
A;Title: Disruption of mesoderm and axis formation in f. A;Reference number: I50103; MUID:95011555; PMID:7926744
A;Status: preliminary; translated from GB/FMRT/PPTTA;Recule type: mRNA
A:Recid...
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C; Superi
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                                                                                                                                                                                                                                  A;Status: preliminary; translated A;Molecule type: mRNA A;Residues: 1-393 <WIT>
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C;Genetics:
                      Qy
                                                                  QУ
                                                                                            Вþ
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Best Local S
Matches 44
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Residues: 1-
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391
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                        GCS
                                                                                         GLDCDEHSTESRCCRYPLTVDFEAFGW-DWIIAPKRYKANYCSGECEFNNFTVSFWLRVP
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names: gact 11
Carassius auratus (goldfish)
Dec-1993 #sequence_revision 31-De
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Similarity 36.9%;
5; Conservative 15
                                                                                                                                        Similarity 4; Conserv
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-115 <GEW>
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                                                                                                                                          34.9%; Score 217.5; DB 2; larity 35.8%; Pred. No. 6.6e-16; Conservative 18; Mismatches 38;
                                                                                                                                                                                                                          EMBL: X76051; NID: g516356;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      15;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Score 217.5; DB 2; Pred. No. 1.9e-16; 5; Mismatches 39;
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                                                                                                                                                                                                                             PIDN: CAA53636.1;
                                                                                                                                                                                                                                                                                                fish by
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                                                                                                                                                                  Length
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                                                                                                                                                                                                                            PID: g516357
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activin beta B-1 chain - yourself (soldfish)
N;Alternate names: gact 2
C;Species: Carassius auratus (goldfish)
C;Date: 31-Dec-1993 #sequence_revision 31-Dec-1993 #text_change
C;Accession: PN0505
R;Ge, W.; Gallin, W.J.; Strobeck, C.; Peter, R.E.
Biochem. Biophys. Res. Commun. 193, 711-717, 1993
A;Title: Cloning and sequencing of goldfish activin subunit ger
A;Reference number: PN0504; MUID:93290666; PMID:8512569
A;Accession: PN0505
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           activin beta C - mouse
C; Species: Mus musculus (house mouse)
C; Date: 28-May-1997 #sequence_revision 18-Jul-1997 #text_c
C; Accession: JC5366
R; Fang, J.; Wang, S.; Smiley, E.; Bonadio, J.
Biochem. Biophys. Res. Commun. 231, 655-661, 1997
A; Title: Genes coding for mouse activin beta C and beta E A; Reference number: JC5366
A; Accession: JC5366
A; MOIEcule type: DNA
A; Residues: 1-352 <FAN>
A; Cross-references: GB:U95962
C; Comment: Activin beta C and beta E form a distinct subset
C; Accessing R; Lau, F.L.; Nisnimon R; Lau, F
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           A; Accession: PNUDUJ
A; Molecule type: DNA
A; Residues: 1-115 <GEW>
C; Superfamily: inhibin
                                                                                                           activin beta C precursor - mouse C; Species: Mus musculus (house mouse) C; Date: 14-Feb-1997 #sequence_revision C; Accession: S70580 R; Lau, F.L.; Nishimori, K.; Matzuk, M.M.
                                                                                                                                                                                                                                                                                                                                                                                                                   QΥ
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Superfamily:
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Best Loc
Matches
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     105/3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  44;
                     Nishimori, K.; Matzuk, M.M.
phys. Acta 1307, 145-148, 1996
uctural analysis of the mouse a
number: S70580; MUID:96283807;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Similarity 37.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     34.8%;
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37.0%;
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Pred.
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Mismatches 3
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                           PMID:86
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-16;
44;
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-16;
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                                                                                                                                                          26-Aug-1999
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N; Alternate n
C; Species: Mu
C; Date: 10-Se
C; Accession:
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A; Reference number: A60087; A; Accession: A60087
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C; Date: 13-
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A; Introns: 106/
C; Superfamily:
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A; Status: prelimina
A; Molecule type: D1
A; Residues: 1-352
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3
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                                                                                                                                                                      musculus (house mouse)
-1999 #sequence_revision
50087; 148265; S31440
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         HYRMRGHSPFANLKS--CCVPTKLRPMSMLYYDDGQNIIKKDIQNMIVEECGCS
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: propeptide #status predicted <PRO>
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:ct: inhibin beta-A chain #status predicted <MAT>
ite: carbohydrate (Asn) (covalent) #status predi
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            source of this protein is ovarian follicular fluid.
mature protein is the carboxyl-terminal segment of a precursor polypep of inhibin have been isolated (A and B) that differ in the amino-termibin is secreted by ovaries or testes and inhibits the secretion of following the secretion of the secr
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scrofa domestica (domestic pig)
1986 #sequence_revision 13-Aug-1986 #text_change 18-Jun-1999
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larity 36.7%;
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Pred. No. 1.2e-15;
L; Mismatches 38;
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Pred. No. 7.5e-16;
7; Mismatches 45
                                                                                                                                                                                                                10-Sep-1999
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                                                                                                                                         Isaacs,
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                                                                                                                                       Η. V.;
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protein

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A; Residues: 309-311, 'X', 313-318, 'XX', 321-325 <AL2>
R; Albano, R.M.; Groome, N.; Smith, J.C.
Development 117, 711-723, 1993
A; Title: Activins are expressed in preimplantation mouse emk
A; Reference number: I48243; MUID:93321614; PMID:8330535
A; Accession: I48265
A; Status: preliminary; translated from GB/EMBL/DDBJ
A; Molecule type: mRNA
A; Residues: 1-424 <RES>
A; Cross-references: EMBL:X69619; NID:g50145; PIDN:CAA49325.1
C; Superfamily: inhibin
                                                                                                      RESULT 15
S50898
inhibin beta-A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      inhibin beta-A chain precursor - rat
C; Species: Rattus norvegicus (Norway rat)
C; Date: 10-Sep-1999 #sequence_revision 10-Sep
C; Accession: B40905; B40056
R; Esch, F.S.; Shimasaki, S.; Cooksey, K.; Mer
Mol. Endocrinol. 1, 388-396, 1987
A; Title: Complementary deoxyribonucleic acid
A; Reference number: A40905; MUID:90331931; PN
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inhibin
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inhibin beta-A chain precursor - bovine N; Alternate names: activin; mesoderm inducing factor; Species: Bos primigenius taurus (cattle) C; Date: 10-Sep-1999 #sequence_revision 10-Sep-1999 C; Accession: S50898; B25732; A60960; B61548 R; Thompson, D.A.; Cronin, C.N.; Martin, F. Eur. J. Biochem. 226, 751-764, 1994 A; Title: Genomic cloning and sequence analyses of the sequence analyses of the sequence analyses.
                                                                                                                                                                                                                                                                                                                                                             A;Status: preliminary
A;Molecule type: mRNA
A;Residues: 1-366,'H',368-424
A;Cross-references: GB:M37482;
C;Superfamily: inhibin
                                                                                                                                                                                                                                                                                                                                                                                                                                     A; Molecule type: mRNA
A; Residues: 1-424 <ESC>
R; Woodruff, T.K.; Meunier, H.; Jones, P.B.(
Mol. Endocrinol. 1, 561-568, 1987
A; Title: Rat inhibin: molecular cloning of
A; Reference number: A40056; MUID:91042598;
A; Accession: B40056
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PMID:2484214
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A; Molecule type
A; Residues: 31(
R; Fukuda, M.; N
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A; Residues: 310-313 <FUK>
C; Genetics:
C; Genetics:
A; Introns: 130/1
C; Superfamily: inhibin
C; Superfamily: inhibin
C; Keywords: disulfide bond; glycoprotein; gonad; heterodimer; homodimer; hormone
C; Keywords: disulfide bond; glycoprotein; gonad; heterodimer; homodimer; hormone
F; 1-28/Domain: signal sequence #status predicted <SIG>
F; 29-309/Domain: propeptide #status predicted <PRO>
F; 310-425/Product: beta-A inhibin/activin #status experimental <MAT>
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A; Title: Cloning and sequence analysis of cDNA species coding for the A; Reference number: A94097; MUID: 86205842; PMID: 3458167
A; Accession: B25732
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A; Title: Mesoderm-inducing factor from bovine amniotic A; Reference number: A60960; MUID:92126853; PMID:2133067
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A; Residues: 258-425 <FOR>
A; Residues: 258-425 <FOR>
A; Cross-references: GB: M13274; NID: g163196; PIDN: AAA97415.1; PID: g163197
A; Note: part of this sequence, including the amino end of the mature protein, R; Chertov, O.Y.; Krasnosel'skii, A.L.; Bogdanov, M.E.; Hoperskaya, O.A.
Biomed. Sci. 1, 499-506, 1990
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number: S50897; MUID:95112839; PMID:7813465
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